



**US Army Corps
of Engineers®**
Albuquerque District

**FINAL
ENVIRONMENTAL IMPACT STATEMENT**

THE CLOSURE OF THE AL BLACK RECREATION AREA

AT THE

COCHITI DAM OUTLET WORKS

IN

SANDOVAL COUNTY, NEW MEXICO

June 2004

U.S. Army Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM 87109

EXECUTIVE SUMMARY

Cochiti Dam and Lake (Project) are located north of Interstate 25 in Sandoval County between Bernalillo and Santa Fe, New Mexico. The Project was authorized for flood and sediment control in the upper Rio Grande Basin by the Flood Control Act of 1960 (Public Law 86-645). Public Law 88-290 (March 26, 1964) authorized the availability of San Juan-Chama Trans-Mountain Diversion water for the development of fish and wildlife resources, conservation, and recreation purposes. The Pueblo de Cochiti (Pueblo) granted easements to the Albuquerque District Corps of Engineers (Corps) for construction, operation, and maintenance of the Project on portions of their lands.

The December 17, 1975, Pueblo/Corps Memorandum of Understanding defined the use and management of the Project land owned by the Pueblo. The Pueblo retained the right to terminate any part of the easement concerning any lands in the Project area that were, in the opinion of the Corps, not necessary to the efficient operation and maintenance of the project. On this basis, Pueblo requests to modify the easement require Corps approval. The Corps would build public use facilities at various locations (including the Outlet Channel Area) and the Pueblo would operate and maintain these amenities. In a May 1982 amendment to the Memorandum of Understanding, the Pueblo transferred the operation and maintenance of all public use areas except the Outlet Channel Area to the Corps. Subsequently, the June 1984 amendment to the Memorandum of Understanding transferred operation and maintenance responsibility for the Outlet Channel Area to the Corps. In 1989 and 1990, the fishing pier at the Outlet Works was made handicapped accessible and renamed the Al Black Recreation Area.

Purpose and Need for the Planned Action

As stated in the Amended Easement Grant and Agreement dated December 31, 1975, the Pueblo retained the right to terminate portions of the easement within the Cochiti Dam and Lake general project area (but not in the Tetilla Peak and Cochiti Dam public use/recreation areas). On November 8, 2001, the Pueblo, Bureau of Indian Affairs, and the Corps agreed to modify the easement provisions for the operation of the Cochiti Dam Outlet Works/Al Black Recreation Area within the general project area. Specifically, the recreation easement would be rescinded but the Corps would retain the original dam operation and maintenance easement. Public access to the site would no longer be allowed. All public-oriented facilities and other amenities that have no bearing on operation or maintenance of the Outlet Works would be removed.

National Environmental Policy Act Environmental Impact Statement Alternatives Evaluation Process

Because the Corps agreed to and approved the Pueblo's request to terminate public use at the Outlet Works, the No Action alternative was not considered feasible. Main features of the Planned Action are:

- Close the Al Black Recreation Area
- Restore the site to natural conditions in coordination with the Pueblo
- Open two new universally accessible recreation areas on Cochiti Lake

The general criteria applied to searching for an alternative recreation site were: location with respect to the existing recreation area, availability of real estate, accessibility of site, and the potential to replace the recreation benefits lost at the Al Black Recreation Area (including the cold water fishing experience). Although one alternative site at Peña Blanca, New Mexico had the potential to replace all lost recreation benefits, local controversy, opposition by fishermen, and unavailability of real estate eliminated this alternative from further consideration.

Five feasible alternative relocation sites on Cochiti Lake were investigated for a replacement recreation facility. The criteria used to determine the acceptability of a site included potential for good fishing, access to/accessibility of site, and factors that affect the quality of the fishing experience (i.e. wind action, boat traffic, existing fishing habitat). Two replacement alternative sites, one each at the Cochiti and Tetilla Peak Recreation Areas, were selected as best satisfying all the site selection criteria.

The closure of the existing facility would result in the unavoidable loss of a unique recreational coldwater fishing opportunity and a net loss of public recreation land, as the replacement sites are within Project lands and currently available for public recreation purposes. On this basis, the alternatives analysis concluded that the Planned Action would have a significant affect on the quality of the human environment in matters of public recreation.

Public Involvement Activities

A Draft Environmental Assessment entitled *Relocation of the Al Black Recreation Area at the Cochiti Dam Outlet Works to Peña Blanca, Sandoval County, New Mexico* was circulated for public review and comment from August 1 through September 2, 2003. A public meeting was held in Rio Rancho, New Mexico on August 28, 2003 to gather additional public input during the review process. Because of the controversy associated with closing the public fishing/recreation area, local resident opposition to establishing a replacement recreation facility near the community of Peña Blanca, New Mexico, objections by local fishermen, and unavailability of suitable real estate for the facility, the Albuquerque District Engineer determined that an Environmental Impact Statement was needed to address the impacts of the Planned Action.

The public review process for the Environmental Impact Statement began with public scoping meetings that were held in Peña Blanca, New Mexico on December 3, 2003, and in Albuquerque, New Mexico on December 4, 2003. A Notice of Intent to compile this Environmental Impact Statement was published in the *Federal Register* on November 6, 2003. The Notice of Availability of the Draft Environmental Impact

Statement was published in the Federal Register on April 9, 2004. The 45-day public comment period ended May 24, 2004.

Document Review

This Environmental Impact Statement was mailed to interested parties that included six Federal agencies, five State of New Mexico agencies, one county agency, three private organizations, three pueblos, five congressmen, and over fifty individuals. It was also made available at Albuquerque District Corps of Engineer offices, three area public libraries, and the community center in Peña Blanca, New Mexico. A legal notice advising of the availability of the document and requesting comments was published in three local daily newspapers on April 9, 2004. An electronic copy was also made available on the Albuquerque District website for review and downloading during the comment period.

Coordination and Consultation

The New Mexico Department of Game and Fish manages the fish and wildlife resources of New Mexico. In this capacity, the agency stocks sport fish species at various locations throughout the state, including rainbow trout at the Cochiti Dam Outlet Works. Because of the importance of their stocking program, coordination with the New Mexico Department of Game and Fish began shortly after the Corps agreed with the Pueblo 's request to permanently close the recreation facility. Following the decision to compile an Environmental Impact State, the New Mexico Department of Game and Fish formally accepted the Corps' written invitation to act as a lead cooperating agency in this process.

As the lead agency for the Planned Action and the preparation of this Environmental Impact Statement, the Corps circulated the draft document to the following Federal, State, and local agencies, and Pueblos for their review and comments:

Federal agencies

National Park Service
Natural Resources Conservation Service
Environmental Protection Agency
Advisory Council on Historic Preservation
Bureau of Indian Affairs
Fish and Wildlife Service

State of New Mexico Agencies

Department of Game and Fish
Environment Department
Interstate Stream Commission
State Historic Preservation Officer

Middle Rio Grande Conservancy District

Pueblos

Pueblo de Cochiti
San Felipe Pueblo
Santo Domingo Pueblo

Local agencies

County of Sandoval

All agencies were notified of and invited to attend all public meetings held in conjunction with this action. During circulation of both the Draft Environmental Assessment and the Draft Environmental Impact Statement, the Corps and the U.S. Fish and Wildlife Service informally consulted under Section 7 of the Endangered Species Act of 1973 regarding potential impacts to protected species that may occur as a result of implementation of the Planned Action.

Environmental Impact Statement Conclusions and Recommendations

As requested by the Pueblo de Cochiti and agreed to by the Corps, the Cochiti Lake Outlet Works/Al Black Recreation Area at Cochiti Dam and Lake in Sandoval County, New Mexico would be closed to the public. The area would be restored to natural conditions in coordination with the Pueblo. With the exception of the loss of the cold-water fishing opportunity, constructing two universally accessible replacement recreation facilities within existing Corps public use areas on Cochiti Lake would replace most other public recreation benefits lost as a result of the Planned Action. As a result of these actions, the unavoidable loss of the regionally unique coldwater fishing recreation opportunity and the net loss of existing public recreation represent locally significant and controversial losses of beneficial public recreation resources. All efforts to avoid or minimize adverse impacts to the environment have been incorporated into the Planned Action. The Corps has determined that realization of this action is in the public interest.

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SECTION 1

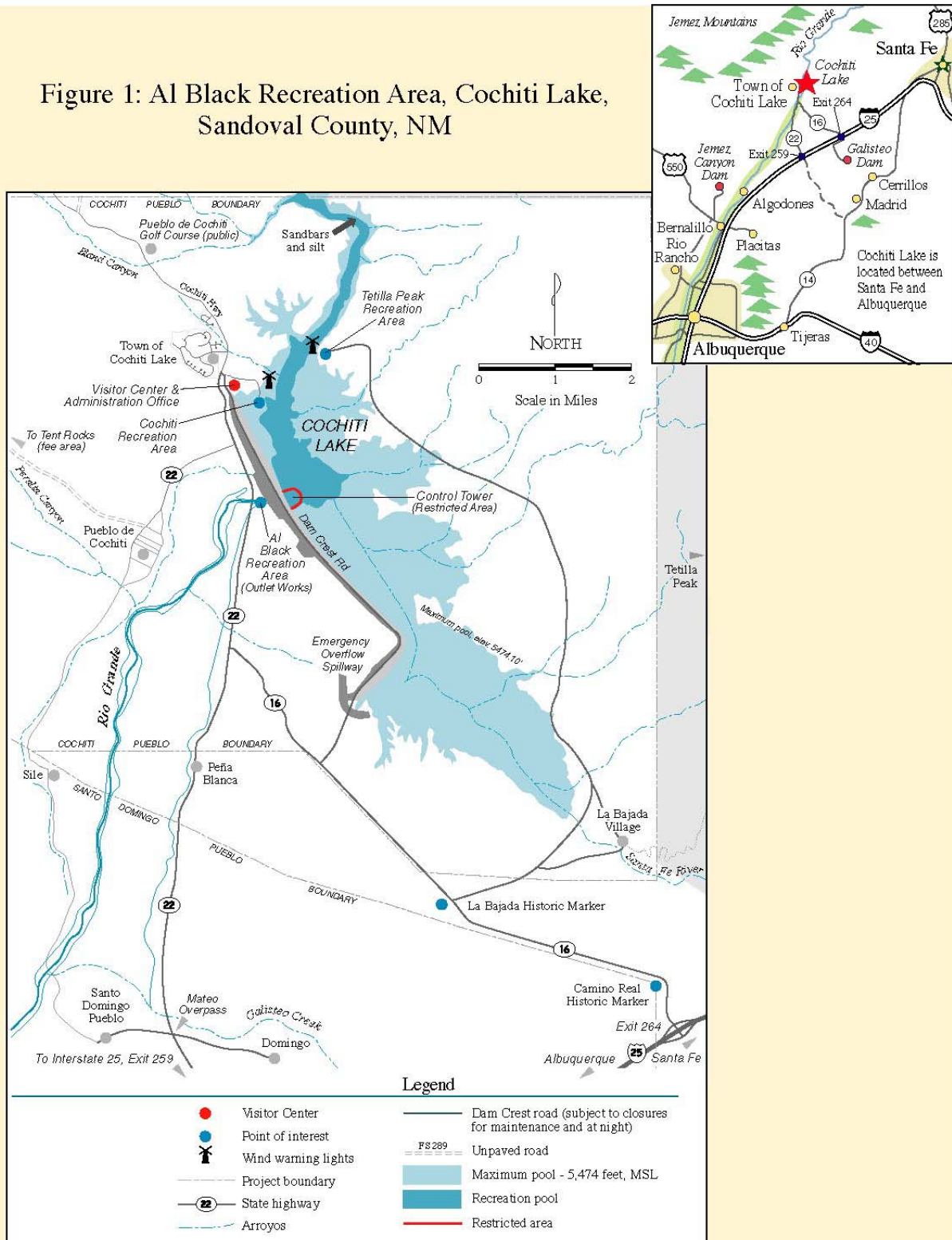
BACKGROUND, PURPOSE AND NEED FOR ACTION

1.01 INTRODUCTION

This Environmental Impact Statement addresses impacts associated with the closure of the Al Black Recreation Area at the Cochiti Dam Outlet Works Area in Sandoval County, New Mexico. The public recreation area is managed by the Albuquerque District of the U.S. Army Corps of Engineers (Corps) on lands held in trust for the Pueblo de Cochiti (Pueblo). The site is located between the west side (face) of the dam and NM Highway 22 just south of the Cochiti Recreation Area (see Figure 1

A Draft Environmental Assessment entitled *Relocation of the Al Black Recreation Area at the Cochiti Dam Outlet Works to Peña Blanca, Sandoval County, New Mexico* detailed the preliminary scope of this Federal action (see Appendix C). The document was completed and circulated for public review and comment during August 2003. Due to public concerns expressed during an August 28, 2003 scoping meeting held in Rio Rancho, NM, and in petitions and letters received prior to and during circulation of the Draft Environmental Assessment, the Corps' determined that the proposed action to relocate the Al Black Recreation Area required an Environmental Impact Statement because it would result in a significant loss of public recreation resources, and was controversial with the local community and fishermen. Additional public scoping meetings were held to gather more information on December 3, 2003 in Peña Blanca, NM, and on December 4, 2003 in Albuquerque, NM. A Notice of Intent to compile this Environmental Impact Statement was published in the Federal Register on November 6, 2003 (see Appendix A).

Figure 1: Al Black Recreation Area, Cochiti Lake, Sandoval County, NM



Due to the public controversy associated with the Planned Action and its adverse affects on public fishing, the New Mexico Department of Game and Fish was requested to participate in the compilation of this Environmental Impact Statement (see Corps' letter dated October 23, 2003 in Appendix A). They acknowledged and accepted this invitation to participate as a cooperating agency in their letter of November 5, 2003 (see Appendix A).

1.02 AUTHORIZATION AND HISTORY OF THE PROJECT

Cochiti Dam spans the Rio Grande and Santa Fe River northwest of Interstate 25 in Sandoval County between Bernalillo and Santa Fe, New Mexico. The dam can be accessed from New Mexico Highways 16 and 22 via the interstate (see Figure 1). The Project was authorized for flood and sediment control in the upper Rio Grande Basin by the Flood Control Act of 1960 (Public Law 86-645).

In a November 16, 1965 Easement Grant and Agreement, the Pueblo granted a perpetual easement to the Corps for construction, operation, and maintenance of the Project on 4,069 acres of Pueblo lands. Flowage easements on an additional 9,621 acres of land were obtained for project purposes from the U. S. Forest Service (8,236 acres), Atomic Energy Commission (345 acres), National Park Service (361 acres), and the University of New Mexico (540 acres). The Corps holds fee title to 139 acres within the flood pool (USACE 1994).

Construction of the Project was initiated in February 1965. The rolled-earth fill dam is approximately 5.4 miles long with a maximum height of 251 feet above the streambed and extends in a generally east-west line across the Rio Grande to a point two miles east of the river and then south across the Cañada de Cochiti and Santa Fe River. The controlled outlet works are located on the Rio Grande and an uncontrolled spillway is located on the south side of the Santa Fe River. A conveyance channel that connects the Rio Grande and Santa Fe pools impounded by the dam allows flows into the reservoir proper from the Santa Fe River during periods of normal storage. The channel also transports backflow of water in the Rio Grande pool to the spillway during periods of high storage.

In 1964, Public Law 88-293 authorized the establishment of a permanent pool of approximately 50,000 acre-feet (1,200 surface acres) for recreation and the development of fish and wildlife resources using water from the San Juan-Chama Project. Initial storage of this pool was attained in December 1975, four months after Project completion. Operation of the dam is conducted in accordance with procedures defined in the Flood Control Act of 1960 and in coordination with the Rio Grande Compact for operation of other flood control and water supply storage facilities in the Rio Grande watershed. Regulated releases of snow pack runoff are made during the period from April 1 through June 30 of each year. Total storage capacity of the reservoir is 724,000 acre-feet at maximum pool elevation.

In addition to providing flood and sediment control, the dam diverts river water to two pre-existing irrigation canals along the Rio Grande, replacing a diversion dam constructed by the Middle Rio Grande Conservancy District in 1930. The Sile Main Canal parallels the river on the west side and serves agricultural lands at the Pueblo de Cochiti (immediately below the dam), the town of Sile, and Santo Domingo Pueblo. The Cochiti East Side Main Canal also provides irrigation water to the two pueblos and serves farmland at the town of Peña Blanca on the east side of the Rio Grande.

A December 17, 1975 Pueblo/Corps Memorandum of Understanding (see Appendix F) defined the use and management of the Project land owned by the Pueblo. The Corps built public use facilities at various locations within the Project boundaries and the Pueblo operated and maintained these features. This included service roads and public parking areas and access and a comfort station for the Outlet Channel Area. In the Amended Easement Grant and Agreement dated July 8, 1978 (see insert in December 3, 2003 Proceedings in Appendix H), the Pueblo retained the right to request termination any part of the easement concerning any lands in the Project area that the Corps agrees were, in the opinion of the Corps, "...unnecessary to the efficient operation and maintenance of the project". On this basis, Pueblo requests to modify the easement require Corps approval. These easement provisions do not apply to the Cochiti Lake and Dam and Tetilla Peak public use (recreation) areas. In a May 25, 1982 amendment to the 1975 Corps/Pueblo Memorandum of Understanding (see Appendix F), the Pueblo transferred the operation and maintenance of all public use areas except at the Outlet Channel Area to the Corps. Subsequently, a June 12, 1984 amendment (see Appendix F) transferred the operation of the public facilities at the Outlet Channel Area to the Corps.

1.03 DESCRIPTION OF THE AL BLACK RECREATION AREA

The Al Black Recreation Area encompasses approximately 8 acres of land on both sides of the stilling basin below the dam outlet and extends from the base of the dam to NM Highway 22 (see Figure 2). Public access is gained by gravel roads on each side of the river. Fishing is allowed along the rock-armored shorelines of the Rio Grande in this area. Physical features of the facility on the north side of the river include a gravel parking lot with metal guardrails along the river; chain link fencing along the highway with a gate and recreation area sign; a universal access toilet with concrete parking pad; a cement sidewalk for universal access to fishing at the dam outlet; a cylindrical plastic slide for stocking fish; and a bronze memorial plaque embedded in concrete to the memory of Al Black. South bank features include a recreation area sign on the highway; a graveled parking lot with metal guardrail along the river; a public restroom; and a chain link fence with gate along the highway. Other permanent, non-recreational features at the site associated with operation of the dam include an emergency generating building and a stream gauge on the north side of the river with an aerial cable that crosses the channel to an anchor on the south bank. Vegetation is absent within the boundaries of the site except for a few non-native trees near the south bank parking lot.

In 1989, improvements were made to the Outlet Channel Area to provide universal accessibility. New facilities included an accessible restroom, parking and

access route. On October 17, 1989, the area was dedicated and named the Al Black Recreation Area. Mr. Black, a local fisherman with a disability, was instrumental in the development of universally accessible facilities at the site. On September 24, 1990, a plaque was placed at the base of the spillway honoring his efforts. The Al Black Recreation site contains the only universally accessible fishing area at Cochiti Lake.

1.04 PURPOSE AND NEED FOR THE ACTION

As expressed in a statement by the Pueblo de Cochiti, they are undertaking a community-wide restoration that involves the addition of community infrastructure and implementation of natural resource restoration work that would collectively provide the means for reintegration of family activities necessary to sustain the Pueblo's cultural and traditional integrity. These family-based activities are the conduit for passing traditions from one generation to the next and have been adversely affected over time by various circumstances. Closing the Al Black Recreation Area is a vital component of the Pueblo's community-wide restoration efforts as it is the first step toward reconciliation on the Pueblos' behalf for the many years of uses at the site that have been inconsistent with the historical and cultural nature of the area. The closure effort requires financial and physical resources beyond the current capabilities of the Pueblo. To accomplish the stated objectives, the Pueblo, together with the Corps and the Bureau of Indian Affairs (BIA), are seeking the sympathy and understanding of the public with the purpose and need of the proposed community-wide restoration efforts. The primary goals of the Pueblo's request to close the Outlet Works to the public include acquiring the necessary funding and Federal agency cooperation to restore the land and relocating the fishing access.

The Pueblo, Bureau of Indian Affairs, and the Corps entered into an agreement (hereinafter referred to as the "Agreement") on November 8, 2001, "...to institutionalize a process for continuing the parties' ongoing dialogue concerning the Cochiti Dam project and its impacts on the Pueblo." The negotiation of the Agreement resulted in many discussions involving both mutual and independent concerns. The process has identified numerous issues requiring the attention of all parties and the need for continuing dialogue. The Cochiti People feel that the dam has affected them in many ways, including the loss of farming and other traditional activities. The loss of farming drastically affected the Pueblo's ability to sustain traditional practices that not only ensured the Pueblo's survival, but also supported many traditional values that created an intrinsic community environment. An entire generation was denied the cultural conditioning associated with these lost values. Traditional values adversely affected include losses such as the fluency of the native language for this generation, the sense of community, and their attachment to the riparian landscape. The mitigation of these effects relies on the removal of public activity at the Al Black Recreation Area and restoring the land to a more natural condition to facilitate re-instituting the beneficial use of the site and creating opportunities to regain lost tribal traditions.

In accordance with the Agreement, the Corps use of property immediately adjacent to the Cochiti Dam Outlet Works would be modified. Specifically, public

access to the area would be terminated. The Corps would retain the original dam operation and maintenance easement. All public-oriented facilities and other amenities that have no bearing on operation or maintenance of the Outlet Works would be removed. In addition, the site would be restored in coordination with the Pueblo. This also includes property west of Highway 22 along the Rio Grande channel.

By letter dated October 28, 2003 (see Appendix A) the Pueblo formally requested the Corps to terminate the Project Land recreation use agreement at the Cochiti Dam Outlet Works. As provided by the Memorandum of Agreement dated July 8, 1978, the Corps has agreed to the Pueblo's request and would close the Al Black Recreation Area to public recreation.

1.05 REGULATORY COMPLIANCE

The Corps has prepared this Environmental Impact Statement in compliance with all applicable Federal statutes, regulations, and Executive Orders, including, but not limited to:

- American Indian Religious Freedom Act
- Archeological Resources Protection Act of 1979 (16 U.S.C. 470)
- National Clean Air Act, as amended (42 U.S.C. 7609 *et seq.*)
- Clean Water Act of 1972, as amended (33 U.S.C. 1251 *et seq.*);
- Comprehensive, Environmental Response, Compensation, and Liability Act (CERCLA)
- Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*)
- Environmental Justice (Executive Order 12898)
- Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 *et seq.*)
- Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Executive Order 12898)
- Federal Noxious Weed Act of 1974 (Public Law 93-269; U.S.C. 2801)
- Farmland Protection Policy Act (P.L. 97-90)
- Floodplain Management (Executive Order 11988);
- National Historic Preservation Act, as amended (16 U.S.C. 470a *et seq.*)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 *et seq.*)
- Protection of Wetlands (Executive Order 11990)
- Protection of Historic and Cultural Properties (36 CFR 800 *et seq.*)
- Protection and Enhancement of the Cultural Environment (Executive Order 11593)
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 *et seq.*)
- U.S. Army Corps of Engineers' Procedures for Implementing NEPA (33 CFR 230)

SECTION 2

DESCRIPTION OF THE PLANNED ACTION AND ALTERNATIVES

All Federal agencies that assist or take part in projects that utilize public funding are mandated by the National Environmental Policy Act to evaluate alternative courses of action. For example, the alternatives can be a set of different locations that satisfy certain defined project criteria and may include design considerations and/or attributes that may mitigate or reduce impacts generated by a given action. In general, alternatives, including a no-action alternative, provide decision makers with an evaluation of present and future conditions with regard to implementation of an action at a given site and time, or that include particular design characteristics. Information and knowledge yielded from alternative evaluations guides the decision-making process so that project activities are in the best interest of the public and environment.

2.01 ALTERNATIVE 1 - NO ACTION

Under this alternative, there would be no changes to existing public access or to the Corps' management of the Outlet Works/Al Black Recreation Area. All existing recreation facilities at the site would be retained and available for public use.

2.02 ALTERNATIVE 2 - THE PLANNED ACTION

2.02.1 Closure of the Al Black Recreation Area

In accordance with the Agreement and the desires of the Pueblo to sustain the cultural and traditional integrity of its community, the Corps would close the Al Black Recreation Area and restore the property to as natural a condition as practicable. Due to the historical and cultural sensitivity of the site, the restoration plan efforts would be completed to the greatest extent possible by September 30, 2004. Following is a description of the planned activities to remove public facilities and restore the landscape to more natural conditions.

A. Recreation Use: The Al Black Recreation Area use agreement would be terminated and public access prohibited. The Cochiti Dam Outlet Works operation and maintenance easement granted to the Corps would remain in effect at the site. Access to the area would be limited to Pueblo representatives and Corps, Middle Rio Grande Conservancy District, and U.S. Bureau of Reclamation operation and maintenance personnel.

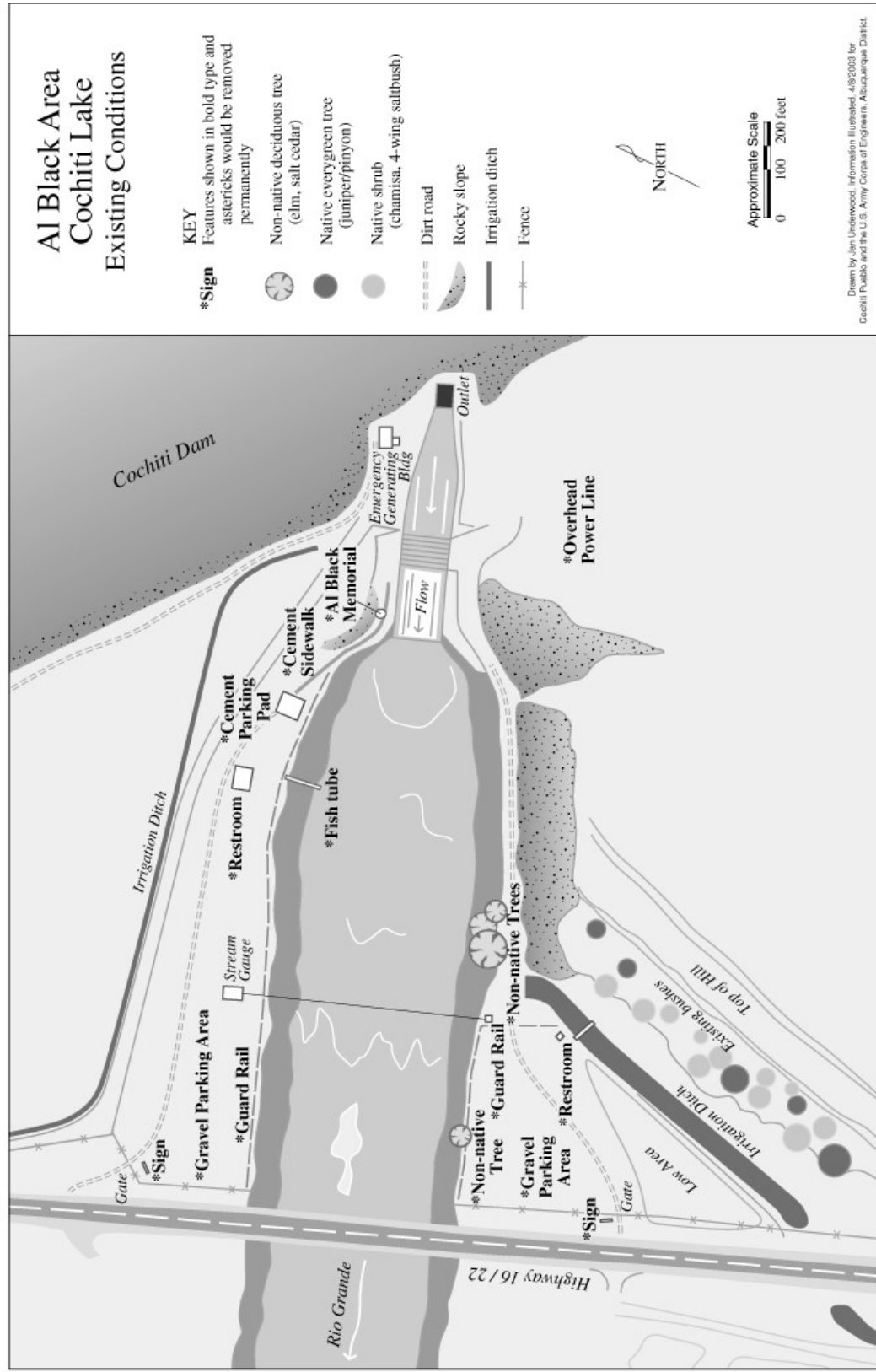
B. Removal of Public Facilities: There would no longer be a need for public use facilities within the existing recreation easement boundaries. All government property would be surplus following Federal guidelines. The Corps would dispose of unsalvageable materials in pre-approved or licensed commercial disposal areas or landfills. The Corps would accomplish the following site modifications of the existing features as illustrated in Figure 2.

1. All parking rails (including support poles) and traffic barriers on both sides of the river channel would be removed. Disturbed areas would be backfilled and disked.
2. All unnecessary interior fencing would be removed.
3. Both temporary and permanent restroom structures, including septic tanks, would be removed and disposed offsite.
4. Four or five non-native trees on the south bank would be removed for disposal.
5. The Al Black memorial plaque and stone would be removed and retained by the Corps.
6. All concrete pads not necessary for the operation or maintenance of the dam would be removed and disposed of properly.
7. Interior signage associated with public activities would be removed. Exterior signs would be replaced with temporary signs describing the cooperative efforts of this project on behalf of the Corps and the Pueblo.
8. The access gate for the south lot would be relocated to the entrance of the existing irrigation ditch road to the south.

C. Proposed Improvements: Once the public facilities have been removed, the following improvements at the former Al Black Recreation Area would be initiated:

1. After the public facilities have been removed, all impermeable compacted material on both north and south (of the river channel) parking lots would be disked to a depth not to exceed 6 inches to facilitate bonding of new borrow material that would be deposited in appropriate places to create slight landscape contours. After structures are removed, the area would be landscaped consistent with the rest of the lot. All landscaped areas would be seeded and/or plants native to the area. The borrow material would add fertile soil for rehabilitation of ground cover and re-create natural landscapes. All borrow material would be obtained from a pre-approved or licensed commercial borrow area to insure that it is free from significant cultural and ecological resources. An estimated 20,000 cubic yards of earth would be used to accomplish these restoration improvements.
2. The north and south parking lots would be filled with fertile soil from a local borrow source. Slightly sculpted hills, not to exceed six feet in height to avoid erosion, would be created and placed in the middle of each lot.
3. Upon completion of the backfilling, re-seeding efforts would focus on restoration of native vegetation communities as appropriate.
4. Soil erosion control techniques would be used throughout the site to encourage groundcover recovery and shrub community establishment for natural soil stability. Feasible techniques include seeded erosion control blankets, silt fences, wattles, and gabions, if necessary, for steeper slopes or cuts.

Figure 2: Al Black Recreation Area, Cochiti Lake, Sandoval County, NM



5. Erosion control techniques would be applied to the severely eroded hills immediately south of the outlet works.
6. All deteriorated chain-link fencing along Hwy 22 on the exterior of the site would be replaced.

2.02.2 Relocation of Facilities to Cochiti and Tetilla Peak Recreation Areas

This alternative involves installing all necessary universally accessible recreation facilities on the shoreline at the existing Cochiti and Tetilla Peak Recreation Areas (See Figure 1). It is the Corps' intent that both sites would be developed for fishing access. Since all land is within the Corps' Project boundaries, it would not be necessary to purchase property or easements nor obtain special funding from Congress for this purpose. However, the details of this proposal would have to meet or conform to the existing or modified Memorandums Of Understanding.

In determining a feasible site for the purpose of establishing universally accessible fishing at Cochiti Lake, the following criteria were considered:

- a. Potential for good fishing
- b. Access to/accessibility of site
- c. Factors that affect quality of fishing experience, i.e., wind action, boat traffic, existing fish habitat

On December 23, 2003 representatives of the Corps and New Mexico Department of Game and Fish met at the Cochiti Lake project office to identify and discuss potential locations on the lake to establish a universally accessible recreation facility. Five areas were visited and assessed for suitability. According to Corps and New Mexico Department of Game and Fish representatives, the Tetilla Peak area on the east side of the lake has good fishing and is protected from prevailing winds. For these reasons, the New Mexico Department of Game and Fish recommended locating a facility at that location.

Three potential sites were identified within the Cochiti Recreation Area on the west side of the lake (see Figure 3). They are easily accessed by existing roads and within close proximity to the existing recreation facilities that include a campground, restroom, a day-use area, and boat ramp. With improvements, these facilities could meet universal accessibility standards. Shade structures could be installed in all these areas.

Site 1 at the Cochiti Recreation Area is located at the mouth of the Cochiti Marina cove. Shade structures could be installed in the area next to the proposed fishing platform. The Corps intends to improve fish habitat as needed as part of managing the



Figure 3 - Cochiti Lake Recreation Area Alternative Fishing Sites

area for recreation even though the existing boat docks in the marina serve as fish habitat/attractors. Although wind action and boat traffic in and out of the marina could occasionally adversely affect the quality of fishing, it was selected as the preferred site as it is the most suitable and easily accessible location for public recreation facilities on the west side of the lake.

The two sites investigated near the Tetilla Peak Recreation area are easily accessed by graveled roads and are within close proximity to existing public recreation facilities that include a campground, day use area, and boat ramp (see Figure 4). Located approximately 10 miles from State Highway 16, this recreation area is open April through October. The Corps would improve and upgrade the access roads. As stated previously, the New Mexico Department of Game and Fish advised that the Tetilla Peak area provides the best shoreline fishing on the lake and is their preferred location for public fishing facilities.

Tetilla Peak Site 2 (see Figure 4) was the selected alternative due to its good fishing, existing natural fish habitat, ample level land for the development of parking, restrooms and shade structures, and the area contains no known cultural resources. The site is within a large cove, protected from wind action, and the area could be restricted to all boat traffic. Since the immediate shoreline area contains suitable habitat attractive to fish, the Corps does not intend to artificially enhance and manage the existing aquatic habitat at this site.

At the chosen recreation sites, the Corps would install facilities for universally accessible fishing access compliant with ADAAG (Americans with Disabilities Act Accessibility Guidelines) that would include:

1. Universally accessible fishing platform
2. Vault toilet (men/women)
3. Parking (20 stalls, 6 with handicap designation)
4. Shade structure/picnic tables (3)
5. Trash receptacles and signage

The universally accessible fishing platform would have a 5.5-foot wide gangway with a slope not to exceed 1:12; a textured, no-skid surface; and railings designed to accommodate anglers in wheelchairs. The approximate dimensions of the fishing platform would be 32.4 feet long by 19.5 feet wide. The platform would be constructed of polyethylene modular units with individual flotation chambers and a flotation capacity of 4,000 pounds. Each unit is approximately 6.6 ft. by 10 ft. and 15 inches deep (see Figure 5)

The vault toilets would have separate rooms for men and women. Features include 4-inch thick concrete waste vaults and continual airflow technology to minimize odor. The facility design would allow for ease of maintenance and minimize vandalism (see Figure 6).

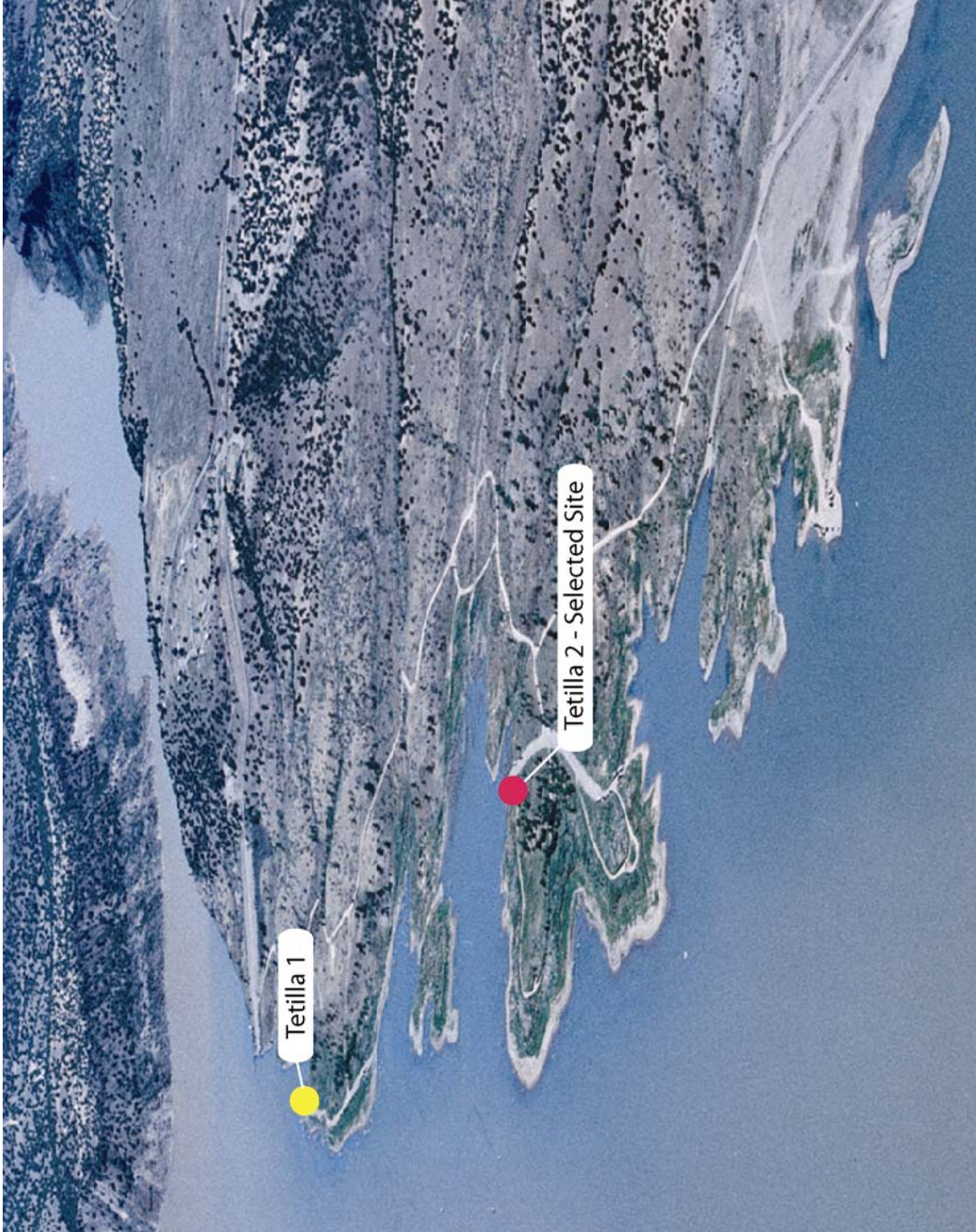


Figure 4 - Tetilla Peak Recreation Area Alternative Fishing Sites

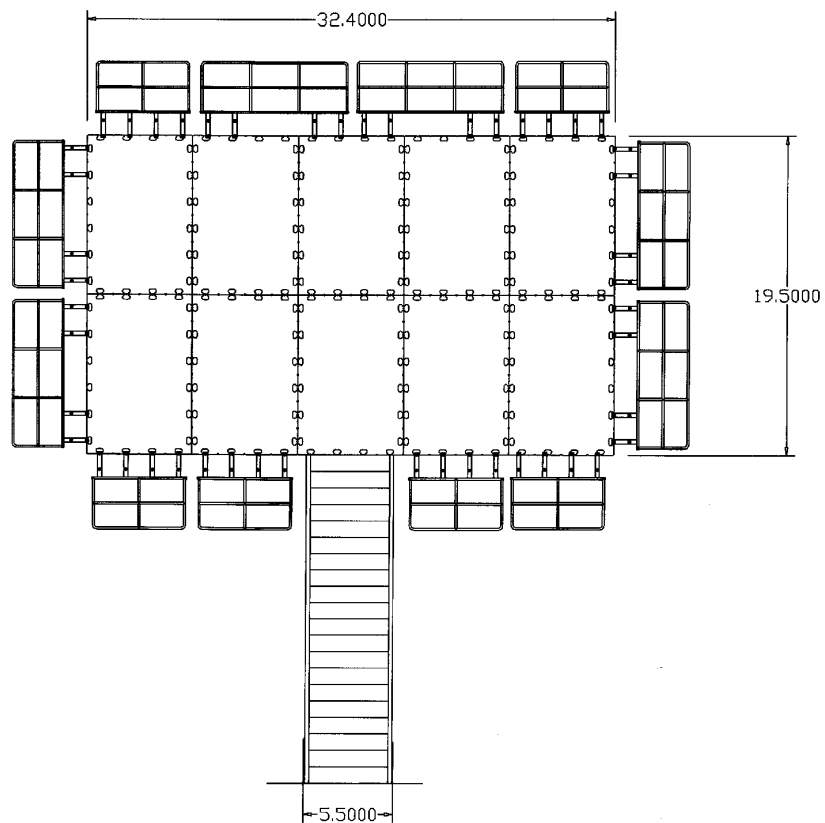


Figure 5: Proposed Fishing Platform for Cochiti and Tetilla Peak Recreation Areas

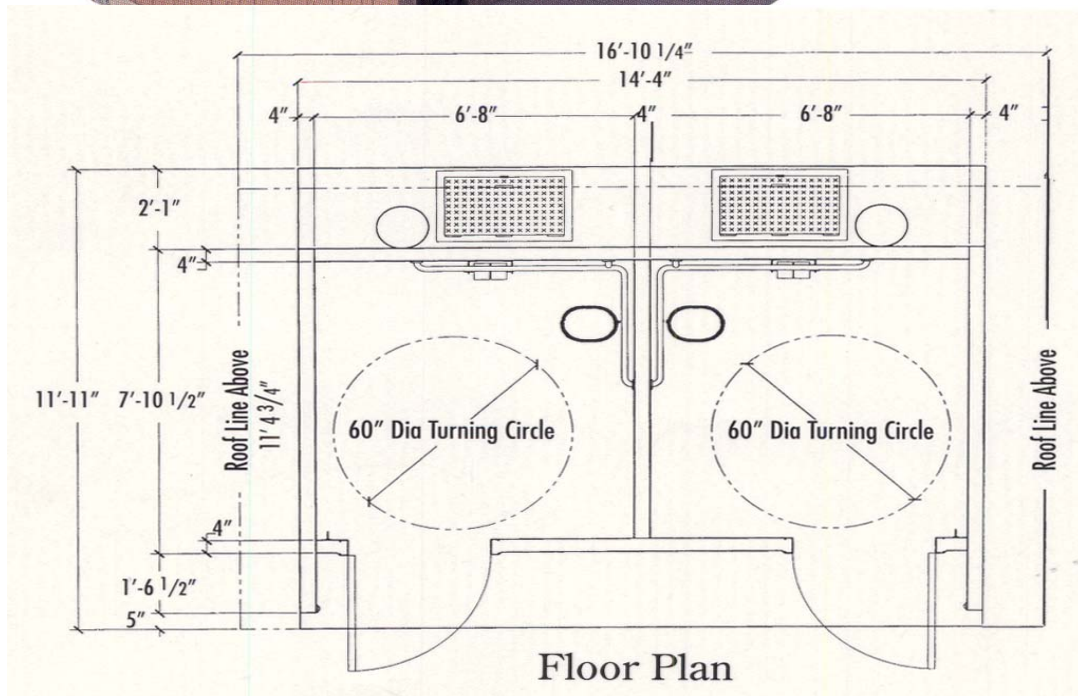


Figure 6: Proposed Universally Accessible Toilet for Cochiti and Tetilla Peak Recreation Areas

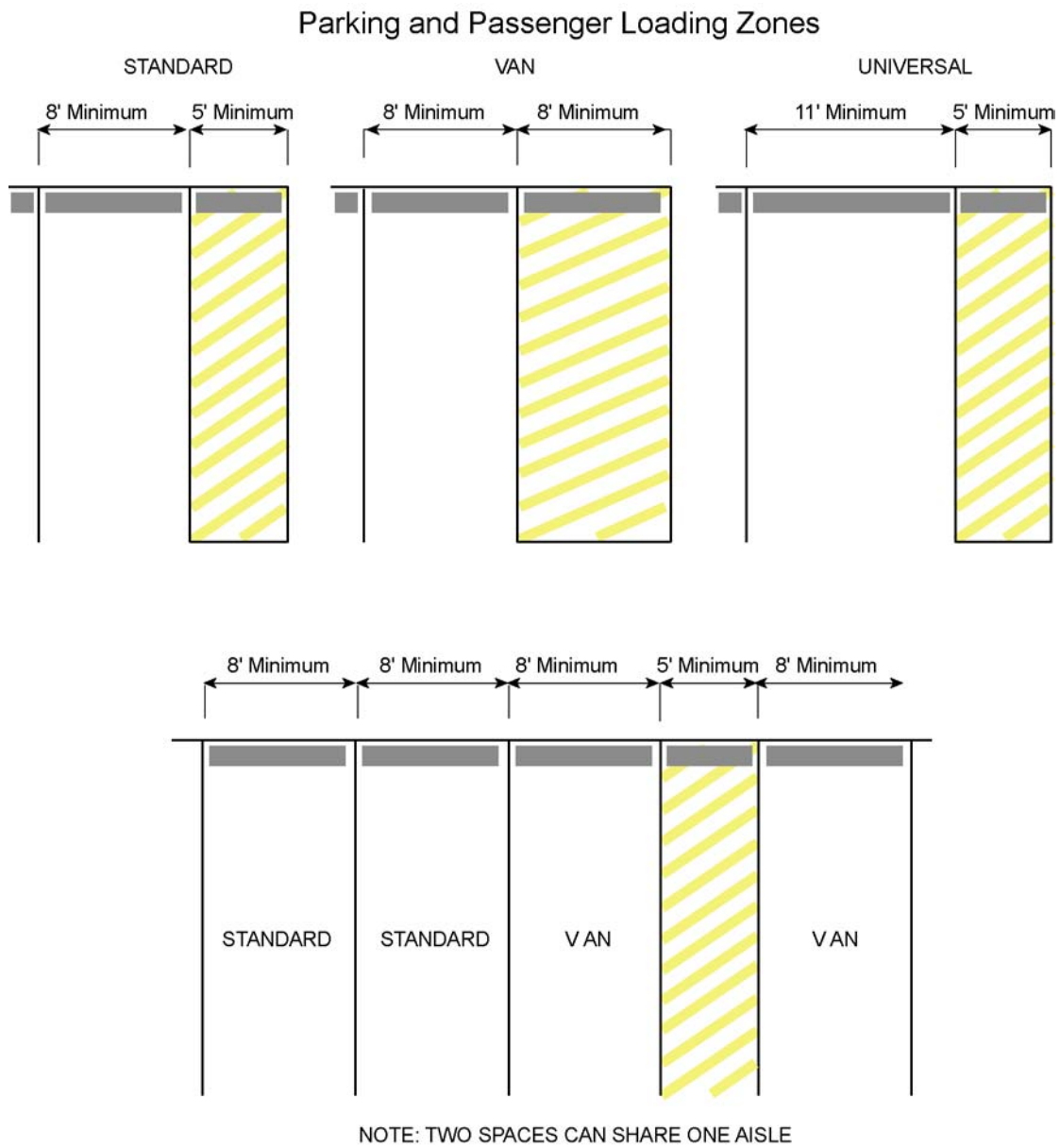


Figure 7: Proposed Parking Design for Cochiti Lake and Tetilla Peak Recreation Areas

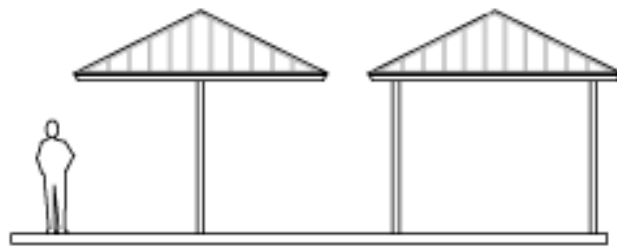


Figure 8: Proposed Shade Structures for Cochiti and Tetilla Peak Recreation Areas

Parking at each site would include 20 spaces. Six spaces would be handicapped designated and would be 13 to 16 feet in total width with loading zones between 5 to 8 feet wide (see Figure 7). Individual shade structures with picnic tables would be located within close proximity to the fishing platforms (see Figure 8).

Corps recreation facilities are designed to withstand periodic inundation. Paved roads and parking lots can withstand inundation quite well. The proposed fishing piers would be raised or lowered with the changing lake level. The sanitary facilities would be vault type. When lake elevations are forecast to inundate the vaults, the vault would be pumped out and filled with fresh water. There may be times when the facilities are unusable due to high water. This is a relatively common occurrence at flood control reservoirs. Between 1997 through 2003 the reservoir pool has fluctuated between five and ten feet. The time frame that the pool would be above the usable recreation facility level is not reasonably predictable. In 1987 the flood pool lasted 13 months. At any given moment, all of the facilities could be out of service from a day to several months. The docks would be relocated during flood reduction efforts and high water but would more than likely be available from a higher vantage, although the support facilities may be underwater.

The asphalt roadway and parking lots can be expected to have a service life of 40 to 60 years, during which time three overlays can be anticipated. The EZ Dock Company estimates that their floating fishing platform would last up to 30 years before replacement is needed. The life expectancies of the shade structures and vault toilets are expected to be 25 years or more.

Annual operating and maintenance costs for one fishing access site is estimated at \$5,000 for the purpose of contracted custodial, park ranger patrol, maintenance and repairs to facilities. Table 1 details the estimated cost to close the Al Black Recreation Area and the estimated construction costs for recreation facilities at the proposed recreation replacement areas.

The Corps has determined that this alternative would satisfy the criteria of location with respect to the existing facility, availability of real estate, site accessibility, and would replace most recreation opportunities with the exception of the unique coldwater fishing experience available at the Al Black Recreation Area. In consideration of the analyses of the other potential relocation alternatives, the Corps has concluded that this alternative is the most feasible and offers the most recreation replacement benefits; therefore, it is the preferred replacement alternative.

Table 1 Estimated cost to close the Al Black Recreation Area and construct two public recreation facilities at Cochiti Lake, Sandoval County, New Mexico.

Al Black Recreation Area Closure Costs:

Relocation and removal of facilities	\$ 20,000	
Site restoration	\$ <u>264,000</u>	
Total estimated cost		\$284,000

Cochiti Recreation Area Construction Costs

1. Fishing platform, approximately 32.4' X 19.5'	\$ 40,000	
2. Vault toilet, ADA compliant	\$ 25,500	
3. Mini-shelter, 12ft. x 12ft., (3)	\$ 26,500	
4. Picnic tables, ADA compliant (3)	\$ 3,600	
5. Signage, trash receptacles, misc.	\$ 5,000	
6. Paved access route (approx. 1,000') at Cochiti site	\$ 7,000	
7. Paved parking for 20 sites, approx. 75'x160'	\$ <u>31,500</u>	
Total estimated cost		\$139,100

Tetilla Peak Recreation Area Construction Costs

1. Fishing platform, approximately 32.4' X 19.5'	\$ 40,000	
2. Vault toilet, ADA compliant	\$ 25,500	
3. Mini-shelter, 12ft. x 12ft., (3)	\$ 26,500	
4. Picnic tables, ADA compliant (3)	\$ 3,600	
5. Signage, trash receptacles, misc.	\$ 5,000	
6. Paved road (approx. 1.1 mile) at Tetilla site	\$405,500	
7. Paved parking for 20 sites, approx. 75'x160'	\$ <u>31,500</u>	
Total estimated cost		\$537,600

GRAND TOTAL \$960,700

Source: Pers. Comm. Piirto 2004

2.03 RELOCATION ALTERNATIVE SITES ELIMINATED FROM FURTHER CONSIDERATION

2.03.1 Introduction

The National Environmental Policy Act requires that Federal actions provide feasible, relevant, reasonable, and appropriate measures to mitigate adverse environmental impacts. For this purpose, mitigation includes compensating for the

impact(s) by replacing or providing substitute resources or environments. In determining a public recreation site alternative for the closure of the Al Black Recreation Area, the following criteria were deemed appropriate considerations.

- a. Location with respect to the existing recreation area.
- b. Duplicating as much as possible the existing cold water fishing experience currently available to the public at Al Black.
- c. Availability of real estate.
- d. Accessibility of site.
- e. Potential to replace the recreation benefits lost at Al Black.

2.03.2 Relocation Site Alternative 1 – Establishing a Universally Accessible Recreation Site Downstream of Cochiti Dam on the East Side of the Rio Grande Near Peña Blanca, New Mexico

Approximately three to four river-miles downstream from the dam, the Middle Rio Grande Conservancy District manages floodplain and shoreline land on the east side of the river at Peña Blanca (see Figure 1). The area is bordered on the west by the river, on the north by Cochiti Pueblo, on the south by Santo Domingo Pueblo, and on the east by a levee and the riverside drain. From Highway 22, the Arroyo Leyba County Road and the levee road provide access to the site. Local residents have historically entered the property to fish, hunt waterfowl, and pursue other recreational activities. Approximately one-quarter mile west of Highway 22, the Middle Rio Grande Conservancy District has installed a gate with lock and assesses an access permit fee and key deposit in order to control access and prevent trash dumping on the property.

The property consists of 43 acres of undeveloped bosque, most of which would be suitable to establish a non-fee public recreation site. Only a few acres would be needed to provide road access, parking, a fishing pier, toilets, and other public amenities, all designed for universal accessibility. Access to shoreline fishing would be gained around or through sparse vegetation below a cottonwood overstory and a dense growth of Russian olives and saltcedar immediately along the river bank. While the fishing pier and other public amenities would be universally accessible, the unimproved shoreline areas offer low banks, sandbars, and deep pools below higher banks to provide other fishing opportunities along the river.

Flows in the river below the dam range from 300 cubic feet per second (cfs) to a maximum 7,400 cfs. The water surface elevations at the downstream Cochiti gage range from 2.1 feet at 550 cfs to 5.8 feet at 7,400 cfs. A universally accessible pier could be designed to safely accommodate water elevations fluctuations of approximately 4 feet.

The access road and parking lot would be constructed of permeable material installed at existing grade. Boundaries of the fishing access area would be delineated with large rocks to prevent off-road vehicle traffic. The portion of the access road that travels north along the river levee from Arroyo Leyba Road would also be delineated. Placement of the access road and parking lot could avoid impacting the cottonwood

overstory and entail minimal removal understory vegetation. Any plantings associated with landscaping would be limited to establishing native vegetation.

The only permanent structure would be a sealed concrete vault toilet. Due to their limited nature, size, and structural profile, it is not anticipated that the public facilities would increase flood stages in the area to levels significantly above events occurring under existing site conditions. Toilet waste would be removed on a regular schedule and prior to anticipated flood events to prevent effluent from entering floodwaters. The cost associated with opening a replacement recreation facility at Peña Blanca is \$338,000.

In a letter dated December 4, 2002 (see Appendix D), the New Mexico Department of Game and Fish expressed their concern for the potential closing of the Al Black Recreation Area. However, they also noted that the proposed area at Peña Blanca might be viable as a relocation site, even though they did not consider this as a new access to fishing but as an improvement to existing access. (It should be noted that the Middle Rio Grande Conservancy District lock and permit fees currently make this a limited access area.) Although unable to state that stocking would continue at the Peña Blanca site, the New Mexico Department of Game and Fish noted that this reach of the river appeared to be suitable for stocking using a schedule similar to that currently in effect at Al Black. To verify this, the New Mexico Department of Game and Fish installed temperature data loggers within the Peña Blanca reach of the Rio Grande on June 20, 2003 and retrieved them on October 17, 2003 to determine whether water temperatures remained cool enough within the reach to maintain a seasonal (winter) trout fishery (see letter dated October 30, 2003 in Appendix D). Their data indicated that they could maintain a stocking program similar to that currently existing at the Al Black Recreation Area. The New Mexico Department of Game and fish did not require any additional water quality data, as pH has never been a concern in the Rio Grande below Cochiti dam (pers. comm. Richard Hansen, September 2003; and page 47, line 13 of the December 3, 2003 Proceedings in Appendix H).

During the public review of the Draft Environmental Assessment, some individuals expressed concern for aquatic weeds inhibiting fishing opportunities at Peña Blanca. Aquatic algae growth is temperature dependent and is abundant during warmer months in the Rio Grande. The New Mexico Department of Game and Fish does not stock trout at Al Black during July and August due to unsuitable (too warm) water temperatures (above 68 degrees Fahrenheit) and also would not stock during this time at Peña Blanca (see their October 30, 2003 letter in Appendix D). As such, stocking would only occur when the water is cool enough to insure survival of trout (September through June) and when algae growth would be minimal or absent.

One individual was concerned that stocked fish would migrate upstream and out of the stocked location. It has been the observation of the New Mexico Department of Game and Fish that stocked fish do not move far from their stocking point. Their surveys on the San Juan River found that stocked catchables did not migrate much more than 0.5 mile up or downstream from the point of stocking. Most of the fish New Mexico Department of Game and Fish recaptured were in the immediate vicinity of the stocking

location. Recognizing that fish may migrate greater distances, fish stocked at Peña Blanca should remain in the area provided there is suitable habitat (pers. comm. Richard Hansen, February 2004a). In-stream habitat at the Peña Blanca reach of the Rio Grande contains deep pools of various sizes, riffles and glides, and slack current areas preferred by trout and other species. Currently, the Peña Blanca reach of the Rio Grande supports a self-sustaining coldwater fishery of brown trout, an indication of the suitability of habitat in this location.

Because the Rio Grande at Peña Blanca is within the critical habitat of the Rio Grande silvery minnow, the New Mexico Department of Game and Fish would consult with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act prior to initiating a stocking program (see October 30, 2003, letter in Appendix D).

As previously discussed, Middle Rio Grande Conservancy District is currently allowing fee access to the property (\$35 annual permit fee and a \$15 key deposit). Although they expressed concerns about the use of the area for a public recreation facility, the Corps could address these issues in a management plan for the site (see November 7, 2002, Middle Rio Grande Conservancy District and March 31, 2003 Corps letters in Appendix D). In addition, the Corps met with Middle Rio Grande Conservancy District on April 17, 2002 and June 23, 2003, to secure a commitment to use the property for a public recreation site. During the latter meeting, the Middle Rio Grande Conservancy District advised the Corps to proceed with the public review of the Draft Environmental Assessment without the desired commitment to use the property and determine what the public reaction would be to establishing a recreation area at the site.

A public meeting on the Planned Action was held on August 28, 2003, in Rio Rancho, NM. Comments opposing the project expressed during this meeting and in petitions and letters received prior to and during circulation of the Draft Environmental Assessment (see Appendix E) determined the need for an Environmental Impact Statement and holding public scoping meetings on December 3, 2003, in Peña Blanca, NM, and on December 4, 2003, in Albuquerque, NM. See Appendix E for the letters and petitions and Appendixes G, H, and I for the Proceedings of the meetings and the detailed Corps responses to the categorized issues. As these records document, many of the comments by attendees were against closing the Al Black Recreation Area and/or using the Middle Rio Grande Conservancy District's property at Peña Blanca as a relocation site for establishing a replacement recreation area. Some of the major issues of concern included the perception that the river at Peña Blanca was not suitable for trout stocking, the adverse impacts a public recreation area would have on the local community including increase vehicle traffic, crime, increased fire hazard, affects on local real estate, concern that the closure of Al Black would result in other recreation area closings, trash removal, and impacts on the bosque (see Corps responses to public comments in Appendixes G, H, and F).

On December 8, 2003, the Middle Rio Grande Conservancy District Board of Directors formally voted not to allow the Corps to use the Peña Blanca property for a recreation area. This decision was confirmed in their letter dated January 23, 2004 (see

Appendix A). Although not disclosed in the letter, an agency representative stated during the December 12, 2003, public meeting that the local Middle Rio Grande Conservancy staff was of the opinion that use of the property for a recreation area would bring illegal activities and destroy the environment. The Middle Rio Grande Conservancy District would respect Peña Blanca property owner's concerns and (at their December 8 Board of Directors meeting) they (the local staff) would recommend against the Corps use of the site as a public recreation area. (See December 3, 2003, Proceedings, Appendix H, page 40 lines 14 – 25, and page 50, lines 1-4.)

The Peña Blanca site would have satisfied all criteria associated with proximity to the Al Black facility, presence of a coldwater recreational fishery, accessibility, and the potential to replace most recreation benefits lost from the closure of the Al Black Recreation Area. However, based on the above information, the Corps has determined that this is not a reasonable or feasible alternative. As it is respecting the Pueblo's desire to remove the fishing area from their lands, so the Corps must also respect the similar decision by the Middle Rio Grande Conservancy District to reject the use of their land for a public recreation site and the citizens of Peña Blanca and local fishermen opposition to locating the facility near their community. Therefore, the Peña Blanca site was eliminated from further consideration as a viable relocation alternative for the Al Black Recreation Area.

2.03.3 Relocation Site Alternatives 2 – Establishing a Universally Accessible Recreation Site Within the Pueblo de Cochiti or the Santo Domingo Pueblo on the Rio Grande, South of the Dam

Establishing a recreation area on Pueblo property on the Rio Grande at a site located between the southern limits of the Al Black Recreation area and the southern property boundary of the Pueblo would have the potential to satisfy all the considerations for establishing an acceptable replacement public recreation facility. However, this alternative on Pueblo land would not conform to their stated purpose and need to bring the management of their lands into uses consistent with the historical and cultural nature of the area. For this reason, this alternative would be unacceptable to the Pueblo and, therefore, was eliminated from further consideration.

The Corps' liaison to the New Mexico pueblos discussed the possibility of establishing a trout fishing recreation area on the Rio Grande within the boundaries of the Santo Domingo Pueblo on at least three occasions after the decision to close the Al Black Recreation Area had been finalized (pers. comm. Kneebone 2004). Based on the verbal responses to this proposal from tribal administrators and tribal counselors, the Corps determined that it would not formally pursue such a request with the tribal council. On this basis, this alternative was removed from further consideration.

2.03.4 Relocation Site Alternative 3 - Establishing a Universally Accessible Recreation Site near Sile, New Mexico on the West Side of the Rio Grande Downstream from the Al Black Recreation Area

This alternative is directly west across the Rio Grande from Alternative Site 1 (Peña Blanca). The boundaries of the site include the river on the east, the Pueblo de Cochiti property line on the north, and the Santo Domingo Pueblo property line on the south. West of the property, Bureau of Indian Affairs Highway 85 runs northeast to southwest through the pueblos. Recreation facilities similar to those described for the Peña Blanca site could be constructed adjacent the river in the relatively undisturbed bosque. As with the Peña Blanca site, a facility at this location would have the potential to replace most lost recreation resources associated with the closing of Al Black including trout stocking by the New Mexico Department of Game and Fish. Adequate acreage would be available for universally accessible public facilities.

A May 2000 search of the Sandoval County property ownership records by a Corps Real Estate Specialist revealed that there are numerous thin strips of properties that terminate in the river channel. Negotiating use of this property by lease or purchase would have been contrary to local residents opposed to this proposal as expressed during the August 28 and December 3, 2003, public meetings (see Records of Proceedings in Appendixes G and H and Corps responses). Additionally, Real Estate and other Corps personnel unsuccessfully searched for an access road from Highway 85 to the desired riverfront area. For these reasons, use of the private riverfront property at Sile for a public recreation area was eliminated from further consideration.

2.03.5 – Relocation Site Alternative 4 - Establishing a Universally Accessible Recreation Site on the Rio Grande Downstream from the Santa Ana Pueblo

The Peña Blanca and Sile sites are the only non-tribal lands on the Rio Grande downstream of Cochiti Dam until the southern boundary of the Santa Ana Pueblo. From that property line south, private or public land is present for about two miles along the river's eastern bank to the northern boundary of Sandia Pueblo; and extends much further south on the western bank. Most of the riparian private land is highly developed within this reach of the river. Any undeveloped land would be limited and expensive. The water temperature in the river has increased to the point that it only supports a warm water fishery; therefore, this reach of the Rio Grande would be unsuitable for stocking trout. This area is located approximately 30 miles south of Al Black and would increase travel distance and time for current users of that facility who travel from north of Cochiti Dam. For these reasons, this general area was eliminated for further investigation as a feasible alternative site for replacing the public recreation benefits lost with the closing the Al Black Recreation Area.

2.03.6 Relocation Site Alternative 5 – Establishing a Universally Accessible Recreation Site on the Rio Grande River above Cochiti Lake

On December 23, 2003, representatives from the New Mexico Department of Game and Fish and Corps investigated the potential for establishing a universally accessible recreation facility on the Rio Grande at Buckman, NM. The site was investigated on the basis of comments received during the December 3, 2003 public meeting (see Proceedings, page 58, line 5, Appendix H.)

The Cochiti Pueblo, the U.S. Forest Service, the Bureau of Land Management, and the Los Alamos National Laboratory own the land abutting the Rio Grande above Cochiti. There is no known private land along the river that might be accessible or available for purchase or lease.

The Buckman Wells Road provides the nearest public access to the river above Cochiti Lake. Camino La Tierra Road, off NM 599 (the Santa Fe Bypass) becomes Buckman Wells Road after passing through the La Tierra subdivision. The river is approximately 11 road miles from the bypass. Albuquerque fishermen frequenting the Outlet Works would travel an additional (approximately) 42 miles from the Interstate 25-NM Highway 22 interchange to get to the site. Those traveling from Santa Fe would save an estimated 20 miles of travel.

On the west side of the La Tierra subdivision, the asphalt pavement changes to a county maintained dirt road to the river. While a four-wheel drive vehicle would not be necessary, travel to the river by automobile could be inhibited during or immediately after precipitation events. The New Mexico Department of Game and Fish representative advised that the access site on the Rio Grande would not be considered a good fishing area due to shallow, rapid flowing water and the absence of deep pools (pers. comm. John Martsh 2003). These physical features (shallow, rapid flowing water, absence of deepwater and quiet pools) would also not be conducive to holding fish stocked at this site. The Buckman access is within the boundaries of the Santa Fe National Forest. For these reasons, the Rio Grande at Buckman was eliminated from further consideration as a location for a public recreation area.

2.03.7 Other Potential Recreation Sites Considered on Cochiti Lake

Potential recreation Site 2 (see Figure 3) at the Cochiti Recreation Area is located within the marina cove, behind the existing marina, and would offer protection from wind action. Its major drawback is that the distance from accessible parking to a fishing platform could be as much as 1,000 feet, which would be a hardship for physically challenged individuals. Boat traffic in and out of the marina could also adversely affect the quality of a fishing experience at this site. For these reasons the site was removed from further consideration.

Cochiti Lake potential recreation area Site 3 (see Figure 3) is located close to the dam, is easily accessed, and has ample space for the development of parking, restrooms

and shade structures. However, prevailing winds would directly and significantly adversely affect this location and the fishing experience. For this reason the site was eliminated from further consideration.

Tetilla Peak potential recreation area Site 1 (see Figure 4) is also close to the boat ramp. It is easily accessed and there is ample level land available for the development of parking, restrooms and shade structures. The site has good fishing with existing natural fish habitat and protection from wind action. The quality of a fishing experience could be slightly affected by boat traffic to and from the adjacent boat ramp. It was less suitable as the selected location site for developing a recreation area. For these reasons, Site 1 was not selected as the location for the recreation site.

2.04 SUMMARY: THE PLANNED ACTION AND IMPLEMENTATION SCHEDULE

Under the Planned Action, the Corps would close the Al Black Recreation Area at Cochiti Lake, remove all recreation facilities, and restore the site to more natural conditions in coordination with the Pueblo. Universally accessible recreation facilities would be constructed at the Cochiti and Tetilla Peak Recreation Areas. The Planned Action would replace most recreation opportunities lost a result of the closure of the Al Black Recreation Area with the exception of the unique coldwater fishing opportunity. It would also result in a net loss of public recreation land. However, based on the alternatives analysis, the Planned Action represents the least environmentally damaging, practical replacement alternative that would mitigate for most of the lost recreation opportunities associated with the closure of the exiting facility.

By letter dated December 3, 2004 (see Appendix A), the Corps acknowledged its willingness to work with the Pueblo de Cochiti on their request to close the Al Black Recreation Area. A decision to proceed with the Planned Action cannot be made, and the Record of Decision cannot be signed, until at least 30 days after the publication in the *Federal Register* of the Environmental Protection Agency's Notice of Availability of the Final Environmental Impact Statement. Then implementation of the project could begin. Corps planning and design are currently underway for the universally accessible facilities at the Cochiti and Tetilla Peak Recreation Areas. In consideration of these requirements, the Corps intends to complete the Planned Action to the greatest extent possible by September 30, 2004 (pers. comm. Michael Carey 2004). The closure of the Al Black Recreation Area would not take place until the new lake facilities are opened for public use.

SECTION 3

EXISTING ENVIRONMENTAL SETTING

3.01 PHYSICAL ENVIRONMENT

The project area (which includes the Al Black Recreation Area and Middle Rio Grande Conservancy District managed Rio Grande riparian land near Peña Blanca) is

located in the northern part of the Mexican Highland Section of the Basin and Range Physiographic Province (Fenneman 1931). Cochiti Dam is near the southern end of the Española Basin, which includes the Rio Grande Valley from the vicinity of the Rio Chama confluence southward to where the Rio Grande exits White Rock Canyon along the southeast slope of the Jemez Mountains. From this point southward to the Big Bend reach in Texas, the Rio Grande Valley is fairly broad with extensive floodplains and a reduced gradient.

Soils within the river valley below the dam are almost entirely alluvial in origin. Gilco and Aga loams (zero to one percent slopes) predominate in the project area and are characterized as deep, moderately well drained, and with moderate permeability and moderate to high water capacity. Water erosion hazard is slight, but soil blowing can be severe. Several other loam, loamy sand, clay soils of zero to four percent slopes are also present, and all are suitable for use as irrigated cropland or pasture (USDA 1987).

3.02 CLIMATE

The climate of north-central New Mexico can be generally characterized as semi-arid continental, with mild summer and cold winter temperatures. The average precipitation for the area is approximately 10 inches per year, and about 70 percent of this moisture falls during the warmer months of the year (June, July, and August). Summer moisture is carried into the state by southerly and southeasterly air circulation from the Gulf of Mexico and is usually released in brief, often heavy thunderstorms. An average of 50 such storms occur in the area each year. Winter moisture is carried into the state by eastward-moving storms from the Pacific Ocean and is often blocked from reaching the project area by the Jemez Mountains and other mountain ranges to the north and west. Snowfall (averaging 7.4 inches annually) that does reach the project area is generally of short duration and does not accumulate.

Temperatures in the area are influenced both by elevation (approximately 5,200 feet above sea level) and the highly variable topography of north-central New Mexico. Cold air draining from off of the Jemez Mountains is often directed into the project area through White Rock Canyon during the colder months, resulting in somewhat lower temperatures during the winter than might be expected at this elevation. The mean annual temperature is close to 50 degrees F, and usually only about 11 days per year reach 90 degrees F. Most days in November through March have freezing temperatures, but only rarely during winter does the temperature fall to zero degrees F.

Winds in the area are predominantly from the west-southwest during the spring (when strongest) and shift to the north-northwest during the rest of the year. Average wind speeds are approximately 12 miles per hour, increasing to 25 miles per hour or greater about 5 percent of the time. Annual sunshine is nearly 75 percent of the total possible and is important during the summertime in the generation of localized winds and storm systems in the project area.

3.03 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Socioeconomic resources include population and economic activity, as reflected by personal income, employment distribution, and unemployment. Some related secondary components, such as housing availability and public services, are not considered in this analysis because the action has no potential to generate measurable changes in populations that would create demand for these resources. Statistics at the county, state, and national level will be used to describe the socioeconomic context. Sandoval County serves as the Region of Influence in which most impacts can be expected to occur, and the state and region serve as regions of comparison. Specific information for recreation in the local area and Region of Influence are relevant and also presented.

Cochiti Reservoir is in Sandoval County, New Mexico. Sandoval County is roughly 3709 square miles, with approximately 24.2 persons per mile. It is generally rural in character and has one minor urban center. The Town of Bernalillo and City of Rio Rancho have populations of 6,611 and 51,765, respectively, in 2000. Both communities are considered “bedroom communities” of the Albuquerque metropolitan area. The total population of Sandoval County in 2000 was 89,908 (U.S. Census 2000a). Bernalillo, the county seat, is approximately 30 miles from the site. Major employers in the immediate geographic area reside in Rio Rancho and are listed in Table 2.

Table 2 Top Eight Employers in the City of Rio Rancho, New Mexico.

Employer	<u>Number of Employees</u>
Intel	5,500
Rio Rancho Public Schools	1,092
Victoria’s Secret	700
Bank of America Call Center	420
City of Rio Rancho	400
JC Penney Catalog Center	400
Sprint PCS	400
Sparton Technology	280

Source: CoC 2001.

In 2000, Sandoval County had a per capita personal income (PCPI) of \$22,247. This PCPI ranked 5th in the State of New Mexico, and was 101 percent of the State of New Mexico average, \$21,931, and was 75% of the national average, \$29,469. In 1990, the PCPI of Sandoval County was \$14,404 and ranked 9th in the State of New Mexico. The average annual growth rate of PCPI over the past 10 years was 4.7 percent. The average annual growth rate for the State of New Mexico was 3.9 percent and for the nation was 4.2 percent (BEA 2002a,b).

The planning and decision-making process for actions proposed by federal agencies involves a study of other relevant environmental statutes and regulations,

including Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which was issued by President Clinton on February 11, 1994. The essential purpose of EO 12898 is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal and local programs and policies. Also included with environmental justice are concerns pursuant to EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children under the age of 18. These risks are defined as “risks to health or to safety that are attributable to products or substances that the child is likely to come into contact with or ingest.”

Environmental justice considerations addressed in this assessment involve both population demographics, including ethnic, racial, or national origin characteristics, and persons in poverty, including children under age 18. In order to determine whether environmental impacts affect minority or low-income populations, it is necessary to establish a basis of comparison, referred to as the “region of comparison.” This area consists of the geopolitical units that include the proposed project. Most environmental effects from the Planned Action, in this instance, would be expected to occur in Sandoval County, New Mexico.

The demographics at the county, state, and national levels are compared in Table 3. When compared to the national level, the population of Sandoval County has proportionately more persons of Hispanic background, while less of other minority groups, including Asian and Black. However, racial composition is similar to the state as a whole, with a higher percentage of American Indian and Alaska Native (17.2 percent compared to 10.5 percent for New Mexico). It should be noted that persons of Hispanic or Latino origin might be White or any other race. In addition, roughly 14.4 percent claimed to be of some other race, while only 5.5 percent did so at the national level. When compared to New Mexico, Sandoval County has a lower percentage of Hispanics. Consequently, the population of Sandoval County is not disproportionately composed of minority groups compared to the region, although there may be specific locations where this is not the case.

The percentage of the population in New Mexico living below poverty (19.3 percent) is higher than for the nation (13.3 percent). Similarly, the percent of children living below poverty in New Mexico (27.5 percent) is considerably higher than the nation (19.3 percent). Poverty conditions in Sandoval County are somewhat better than the state, with 12.9 percent below poverty and 17.7 percent of children below poverty. Therefore, Sandoval County, when compared to the state, is not disproportionately low-income (U.S. Census 2000a,b).

Table 3. Profile of Demographic Characteristics, Year 2000

<i>Geographic Area</i>	<i>Total Population</i>	<i>Race (Percent of Total Population)*</i>						
		<i>White</i>	<i>Black or African American</i>	<i>American Indian and Alaska Native</i>	<i>Asian</i>	<i>Native Hawaiian and Other Pacific Islander</i>	<i>Some Other Race</i>	<i>Hispanic or Latino (of Any Race)</i>
U.S.	281,421,906	75.1	12.3	0.9	3.6	0.1	5.5	12.5
New Mexico	1,819,046	69.9	2.3	10.5	1.5	0.2	19.4	42
Sandoval County	89,908	68.1	2.2	17.2	1.5	0.2	14.4	29.4
Bernalillo (Town)	6,611	63.3	1.0	4.6	0.3	0.2	34.3	74.8
Rio Rancho (City)	51,765	82	3.4	3.4	2.1	0.3	13.1	27.7

*Percentages may add to more than 100% because individuals may report more than one race.

Source: U.S. Census 2001a,b.

3.04 LAND USES

Lands surrounding Cochiti Lake on Pueblo de Cochiti land are devoted to agricultural uses (cropland, irrigated and non-irrigated livestock pasture), residential use, or are unused. The Tetilla Peak, Cochiti, and Al Black Recreation Areas are within the 4,069-acre Pueblo land easement devoted to floodwater and sediment control for the Cochiti Dam Project. As previously discussed, an additional 9,621 acres of flood easement were also obtained from various entities. The Corps/Pueblo easement area also contains a permanent 1,200 surface acre reservoir pool for recreation and fish and wildlife enhancement.

Lands to the west of the dam at the town of Cochiti Lake are leased from the Pueblo by private entities and are mainly for residential and recreational uses. Properties at the town of Peña Blanca adjacent to Pueblo de Cochiti and Santo Domingo Pueblo lands are privately owned and, in general, are dedicated to residential and agricultural uses.

Farmland that is protected from conversion or other adverse effects under provisions of the Farmland Protection Policy Act (Public Law 97-98) includes lands defined as prime or unique, or that are of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate state or unit of local government agency or agencies. Prime farmland soil survey units within Sandoval County include Gilco, Aga, Zian, El Rancho, Jocity, and Peralta. Aga, Gilco, and Zia soils are present below the dam. There are no prime farmlands within the Al Black Recreation Area or other Cochiti Lake Project lands.

3.05 HYDROLOGY AND WATER QUALITY

The Rio Grande and Santa Fe River watersheds upstream from Cochiti Dam drain an area of more than 11,000 square miles in northern New Mexico and southern Colorado. The drainage basin lies between the Continental Divide and the Sangre de Cristo Mountains and includes several other tributary streams, including the Rio Chama, Rio Hondo, Red River, and Rio Pueblo de Taos. Snowmelt runoff from high elevations is the most significant contributor to stream flows in the basin. Stream slopes in these high elevations may be several hundred feet per mile, decreasing to 150 feet per mile or less in the Rio Grande Gorge, and only about 10 feet per mile in the Española Valley and White Rock Canyon. From Cochiti Dam downstream, the slope is only 4-5 feet per mile. Prior to the construction of Cochiti Dam and other flood control projects in the basin, flood flows of 10-20,000 cfs were not rare in White Rock Canyon and downstream reaches. Present-day discharges in the Rio Grande downstream from Cochiti Dam range from a typical minimum of about 300 cfs to spring runoff peaks that, through regulation, do not exceed 7,000 cfs at the Albuquerque gauge. This is the current safe channel capacity water control criterion that is defined in the Cochiti Lake Water Operations Manual (USACE 1996). This criterion is being evaluated in the Upper Rio Grande Water Operations Environmental Impact Statement that is considering changes up to 10,000 cfs at the Albuquerque gauge.

The New Mexico Water Quality Control Commission (2000) has designated uses and standards for interstate and intrastate streams in New Mexico (by stream segment). Designated uses of the main stem of the Rio Grande from the Angostura Diversion Works upstream to Cochiti Dam are: irrigation, livestock watering, wildlife habitat, secondary contact, coldwater fishery, and warm water fishery. However, State water standards do not apply to tribal lands. No designated uses are defined for the Santa Fe River below Cochiti Dam although this reach does provide livestock and wildlife watering. Cochiti Lake is designated for use as livestock and wildlife watering, warm water fishery, coldwater fishery, and primary contact.

The Clean Water Act provides for the protection of waters and wetlands of the United States from impacts associated with irresponsible or unregulated discharges of dredged or fill material in aquatic habitats including wetlands, as defined under Section 404(b)(1). In the event that a Section 404 permit is needed, state water quality certification is required under Section 401 of the Clean Water Act. Enforcement of Section 401 within the Pueblo de Cochiti is the responsibility of the U.S. Environmental Protection Agency. No baseline numeric water quality standards have been established for tribal lands; however, the Environmental Protection Agency commonly takes into consideration the standards set by neighboring governments when assessing water quality impacts.

Structures, such as piers, are regulated under the provisions of Section 10 of the Rivers and Harbors Act of 1899 in navigable waters of the United States. Department of the Army permit authorization is required prior to construction for such activities

occurring in water bodies regulated under these laws. In New Mexico, the only navigable body of water is the San Juan Reservoir located near Aztec, New Mexico.

Section 402(p) of the Clean Water Act regulates point source discharges of pollutants into waters of the United States and specifies that storm water discharges associated with construction activity be conducted under National Pollutant Discharge Elimination System permit guidance. Under Phase II regulations, effective March 10, 2003, storm water discharges associated with Federal projects that require a Storm Water Pollution Prevention Plan include discharges from construction activities (clearing, grading, and excavation) that result in disturbance to 1 to 5 acres of land (Federal Register 1999). Phase I regulations require a Storm Water Pollution Protection Plan for land disturbances of 5 or more acres.

3.06 AIR QUALITY AND NOISE

Sandoval County is designated as an air quality attainment area for criteria pollutants (sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, lead, and ozone) as determined by National Ambient Air Quality Standards (New Mexico Environment Department 1998). Almost all of Sandoval County is considered as Class II under the Prevention of Significant Deterioration (PSD) Program. The 23,000-acre Bandelier Wilderness on the west side of White Rock Canyon lies within 10 miles of the project area and is considered pristine for air quality (PSD Class I) and is generally protected from any increase in air contaminant levels by state regulations. Air quality in the project area is generally good to excellent due to the lack of urban industrial development. Although high winds are common in and around the project area, blowing dust is generally not a problem except during extremely dry years. Airborne particulate and carbon monoxide concentrations from wood burning in the Rio Grande Valley are occasionally high during winter months when temperature inversions and wood stove use are both more prevalent.

Noise levels in and around the Cochiti Lake are generally low and typical of rural or moderately developed communities. Recreational use of Cochiti Lake generally does not contribute to area noise levels observed from daily normal activities as boat traffic is limited to low motor decibel “no wake” speeds.

3.07 BIOLOGICAL RESOURCES

The project area is located within the Great Basin Conifer Woodland and the Plains and Great Basin Grassland biotic communities as defined by Brown (1982). These biotic communities characterize the vegetation outside of the Rio Grande floodplain. Uplands adjacent to the river valley are vegetated by one-seed (*Juniperus virginiana* var. *scopulorum*) and Rocky Mountain junipers (*J. monosperma*), piñon pine (*Pinus edulis*), Apache plume (*Fulugia paradoxia*), rabbit brush (*Chrysothamnus depressus*), skunkbush (*Rhus tribolata* var. *tribolata*), fourwing saltbush (*Atriplex canescens*), snakeweed (*Gutierrezia glutinosa*), walkingstick cholla (*Opuntia* sp.), prickly pear (*Opuntia fragilia* var. *fragilia*), and a variety of forbs and grasses including phlox (*Phlox* sp.), groundsels

(*Senecio bigelovii* var. *hallii*), asters (*Aster* sp.), grama grasses (*Bouteloua* spp.), dropseeds (*Sporobolus* spp.), muhly (*Muhlenbergia torreyia*), and western wheatgrass (*Agropyron occidentale*).

The shorelines at the Cochiti and Tetilla Peak Recreation areas where the proposed universally accessible fishing facilities would be located contain no vegetation of significance. As noted under paragraph 1.03, the Al Black Recreation Area contains rock armored shorelines, graveled parking areas, and concrete walkways. No vegetation of significance is present within the footprint of the facility on either side of the river.

The following vertebrate animal species are known or expected to occur in the general area, but are not necessarily found at the Al Black Recreation Area or on or around Cochiti Lake.

Mammals known or likely to be present include little brown myotis (*Myotis lucifugus*), Yuma myotis (*Myotis yumanensis*), pallid bat (*Antrozous pallidus*), big free-tailed bat (*Tadarida macrotis*), Brazilian free-tailed bat (*T. brasiliensis*), desert cottontail (*Sylvilagus auduboni*), black-tailed jackrabbit (*Lepus californicus*), rock squirrel (*Spermophilus variegatus*), Botta pocket gopher (*Thomomys bottae*), beaver (*Castor canadensis*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), white-footed mouse (*P. leucopus*), piñon mouse (*P. truei*), house mouse (*Mus musculus*), meadow jumping mouse (*Zapus hudsonius*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), bobcat (*Felis rufus*), badger (*Taxidea taxus*), porcupine (*Erethizon dorsatum*), striped skunk (*Mephitis mephitis*), mule deer (*Odocoileus hemionus*).

Hubbard and Hubbard (1979) reported a total of 154 species of birds occurring at least seasonally at Bandelier National Monument, upstream of Cochiti Lake. Many, if not most, of the same species occur in the project areas as well. Common species include Great Blue Heron (*Ardea herodias*), Snowy Egret (*Egretta thula*), Canada Goose (*Branta canadensis*), Lesser Snow Goose (*Anser c. caerulescens*), Mallard (*Anas crecca*), Northern Shoveler (*A. clypeata*), Ring-Necked Duck (*A. collaris*), Ruddy Duck (*Oxyura jamaicensis*), Common Merganser (*Mergus merganser*), Turkey Vulture (*Cathartes aura*), Cooper's Hawk (*Accipiter cooperii*), Red-Tailed Hawk (*Buteo jamaicensis*), Swainson's Hawk (*B. swainsoni*), Golden Eagle (*Aquila chrysaetos*), American Kestrel (*Falco sparverius*), Sandhill Crane (*Grus canadensis*), American Coot (*Fulica Americana*), Killdeer (*Charadrius vociferous*), Ring-Billed Gull (*Larus pipixcan*), Mourning Dove (*Zenaida macroura*), Greater Roadrunner (*Geococcyx californianus*), Western Screech-Owl (*Otus kennecotti*), Great Horned Owl (*Bubo virginianus*), Belted Kingfisher (*Ceryle alcyon*), Northern Flicker (*Colaptes auratus*), Western Kingbird (*Tyrannus vociferans*), Barn Swallow (*Hirundo pyrrhonota*), Scrub Jay (*Aphelocoma coerulescens*), Black-billed Magpie (*Pica pica*), Common Raven (*Corvus corax*), American Crow (*C. brachyrhynchus*), Black-capped Chickadee (*Poecile atricapilla*), Bewick Wren (*Thryomanes bewickii*), American Robin (*Turdus migratorius*), Mountain Bluebird (*Sialia currucoides*), Western Meadowlark (*Sturnella neglecta*), Brown-headed Cowbird (*Molothrus ater*), Spotted Towhee (*Pipilo maculatus*), Dark-eyed Junco (*Junco*

hyemalis), White-crowned Sparrow (*Zonotrichia leucophrys*), Song Sparrow (*Melospiza melodia*) and Osprey (*Pandion haliaetus*).

Amphibians and reptiles known to occur in the project areas include tiger salamander, plains spadefoot (*Sciaphiopus bombifrons*), Woodhouse toad (*Bufo woodhousei*), northern leopard frog (*Rana pipiens*), bullfrog (*R. catesbeiana*), painted turtle (*Chrysemys picta*), spiny softshell turtle (*Trionyx spiniferus*), lesser earless lizard (*Holbrookia maculata*), eastern fence lizard (*Sceloporus undulatus*), plateau whiptail (*Cnemidophorus velox*), checkered whiptail (*C. tessellatus*), western hognose snake (*Heterodon nasicus*), coachwhip (*Masticophis flagellum*), glossy snake (*Arizona elegans*), common gartersnake (*Thamnophis sirtalis*), western hognose snake (*Heterodon nasicus*), and western diamondback rattlesnake (*Crotalus atrox*) (Stebbins 1985).

In a study of the Middle Rio Grande, Plateau Ecosystems Consulting, Inc. (2001) identified 14 fish species within the Cochiti Pueblo reach below the dam. Most common are the longnose dace (*Rhinichthys cataractae*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), white sucker (*Catostomus commersoni*), black bullhead (*Ictalurus melas*), channel catfish (*Ictalurus punctatus*), common carp (*Cyprinus carpio*), largemouth bass (*Micropterus salmoides*), river carpsucker (*Carpionodes carpio*), and bluegill (*Lepomis macrochirus*). The Rio Grande silvery minnow was not observed in the reach immediately below or above Cochiti Dam during the five-year sampling period.

Cochiti Lake is primarily a warm-water fishery consisting of northern pike (*Esox lucius*), walleye (*Sander vitreus*), black bullhead, channel catfish, common carp, white bass (*Morone chrysops*), smallmouth bass (*Micropterus dolomieu*), largemouth bass, green sunfish (*Lepomis cyanellus*), white crappie (*Pomoxis annularis*), black crappie (*Pomoxis nigromaculatus*), and bluegill (Ortiz 2001). The New Mexico Department of Game and Fish occasionally has supplemental stockings of walleye, largemouth bass, and channel catfish (see November 5, 2003 letter in Appendix A.)

3.08 ENDANGERED AND PROTECTED SPECIES

Three agencies who have primary responsibility for the conservation of animal and plant species in New Mexico are the U.S. Fish and Wildlife Service, under authority of the Endangered Species Act of 1973 (as amended); the New Mexico Department of Game and Fish, under the authority of the Wildlife Conservation Act of 1974; and the New Mexico Energy, Mineral and Natural Resources Department, under authority of the New Mexico Endangered Plant Species Act and Rule No. NMFRCD 91-1. Each agency maintains a list of animal and or plant species that have been classified or are candidates for classification as endangered or threatened based on present status and potential threat to future survival and recruitment (see Appendix A). Of these species, those with potential to occur in or near the project are given in Table 4. Because the State of New Mexico has no jurisdiction on tribal lands, only those state listed species of concern capable of migrating to or from the project area are included in this listing and discussion.

Table 4: Federal and State of New Mexico species of concern that may occur in the project area.

Species	Federal Status*	State Status*
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	T	T
Whooping Crane (<i>Grus americana</i>)	E	E
Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>)	E	E

*E – Endangered *T – Threatened

Bald Eagle

The Bald Eagle (*Haliaeetus leucocephalus*) is a winter resident along rivers and at reservoirs in the southwestern United States. This species was listed as Federally endangered in 1967 (32 Federal Register 4001) and again in 1978 (43 Federal Register 6233), but recently was reclassified as threatened due to breeding population increases throughout the country (U.S. Fish and Wildlife Service 1995). The U.S. Fish and Wildlife Service proposed removing the Bald Eagle from the list of endangered and threatened wildlife in July 1999 (U.S. Fish and Wildlife Service 1999); however, final delisting of the species has not yet occurred.

In New Mexico the Bald Eagle is a winter migrant from the northern border, and southward to the Gila, lower Rio Grande, middle Pecos, and Canadian valleys. Cochiti Lake is a key habitat area that includes winter roost and a concentration area. The lake has a large number of waterfowl from November to March and fisheries supported by the reservoir and river that provide the prey base for foraging eagles. The Bald Eagle is associated with aquatic ecosystems throughout most of its range. The typical diet of Bald Eagles is fish, with many other types of prey such as waterfowl and small mammals, depending on location, time of year, and population cycles of the prey species (U.S. Fish and Wildlife Service 1995). In New Mexico, these birds typically roost in groups in trees at night, usually in protected areas such as canyons (New Mexico Department of Game and Fish 1988).

The general daily routine for a wintering Bald Eagle is to leave its roost at dawn for its foraging ground, feed until midmorning, perch for most of the midday, and possibly feed again in late afternoon before returning to its roost site (Hawkwatch International, Inc. 1993). Local foraging areas include the headwaters above the lake, the head of the lake in Lower White Rock Canyon, the main lake area, and the tailwaters below the dam. Both adult and juvenile birds may be present in and around Cochiti Lake between late November and early March.

Their white heads and tails and dark bodies easily identify adults Bald Eagles. The birds prefer to roost and perch in large trees near water. There are no large trees suitable for perching along the shoreline of Cochiti Lake.

The Corps conducted aerial surveys for Bald Eagles between 1988 and 1996 during January, the month of highest abundance. During the 9 years of survey, Bald Eagles were present at the Cochiti Dam Tailwaters during all 9 years and the number of birds observed ranged from 2 to 18. Along the main stem of the Rio Grande from the confluence of the Jemez River upstream to the Santa Fe River, the bird was also observed in every year of the survey with observations ranging from 1 to 15 individuals per year. The maximum number of Bald Eagles observed in any one year was 20 at White Rock Canyon (Table 5).

Table 5. Bald Eagle occurrence along the Rio Grande and major reservoirs during aerial surveys conducted by the Corps of Engineers in January 1988 – 1996.

Reach or reservoir	Number of years present	Mean (SD)	Min.	Max.
Rio Grande: Jemez River to Santa Fe River	9	6.8 (4.2)	1	15
Cochiti Dam Tailwaters	8	6.5 (4.9)	2	18
Cochiti Lake	9	3.7 (5.8)	0	18
Cochiti Lake, Santa Fe Arm	7	3.4 (1.6)	1	6
Rio Grande: White Rock Canyon	9	7.9 (5.7)	3	20

The January-February 2002 bird monitoring at Cochiti Lake recorded 5 adult and 3 immature Bald Eagles roosting and foraging along the Rio Grande channel below the dam (Pers. Com. Skalbeck 2002).

Southwestern Willow Flycatcher

The project area is within the current range of the Southwestern Willow Flycatcher (*Empidonax traillii extimus*). The U.S. Fish and Wildlife Service listed the flycatcher as endangered in February 1995 (U.S. Fish and Wildlife Service 1995a). The flycatcher also is classified as endangered (Group I) by the State of New Mexico (New Mexico Department of Game and Fish 1987).

The current range of the Southwestern Willow Flycatcher includes Arizona, New Mexico, southern California, western Texas, southwestern Colorado, and southern portions of Nevada and Utah (Unitt 1987; Browning 1993). In New Mexico, flycatchers are known to breed along the Rio Grande, Zuni, San Francisco, and Gila River drainages. Available habitat and overall numbers have declined statewide (U.S. Fish and Wildlife Service 1997). A recovery plan for the Southwestern Willow Flycatcher has been completed.

Loss and modification of nesting habitat is the primary threat to this species (Phillips *et al.* 1964; Unitt 1987; and U.S. Fish and Wildlife Service 1993). Human induced hydrological and ecological changes have heavily influenced the composition

and extent of floodplain riparian vegetation along the Rio Grande (Bullard and Wells 1992; Dick-Peddie 1993). Loss of habitat used during migration also threatens the Flycatcher's survival. Large-scale losses of southwestern wetland and cottonwood-willow riparian habitats used by the Southwestern Willow Flycatcher have occurred (Phillips *et al.* 1964; Carothers 1977; Rea 1983; Johnson and Haight 1984; Howe and Knopf 1991). Brood parasitism by brown-headed cowbirds (*Molothrus ater*) has also been implicated in the decline of songbirds including those found in the western riparian habitats (Gaines 1974, 1977; Goldwasser *et al.* 1989; Laymon 1987). Southwestern Willow Flycatchers are more susceptible to brown-headed cowbird nest parasitism because of the ease of "egg dumping" in the Flycatcher's open cup nest design.

The Southwestern Willow Flycatcher is an obligate riparian species and nests in thickets associated with streams and other wetlands where dense growth of willow, buttonbush, boxelder, Russian olive, saltcedar, or other shrubs are present. Nests are frequently associated with an overstory of scattered cottonwood. Throughout the flycatcher's range, these riparian habitats are now rare, widely separated, and occur in small and/or linear patches. Southwestern Willow Flycatchers nest in thickets of trees and shrubs approximately 6 to 23 feet in height or taller, with a densely vegetated understory approximately 12 feet or more in height. Surface water or saturated soil is usually present beneath or next to occupied thickets (Phillips *et al.* 1964; Muiznieks *et al.* 1994). At some nest sites, surface water may be present early in the breeding season with only damp soil present by late June or early July (Muiznieks *et al.* 1994; Sfera *et al.* 1995). Habitats not selected for nesting include narrow (less than 30 feet wide) riparian strips, small willow patches, and stands with low stem density. Suitable habitat adjacent to high gradient streams does not appear to be used for nesting. Areas not utilized for nesting may still be used during migration.

Breeding pairs have been found within the Middle Rio Grande from Elephant Butte Reservoir upstream to the vicinity of Española. Southwestern Willow Flycatchers begin arriving in New Mexico in late May and early June. Breeding activity begins immediately and young may fledge as soon as late June. Late nests and re-nesting attempts may not fledge young until late summer (Sogge and Tibbitts 1992; Sogge *et al.* 1993).

Occupied and potential Southwestern Willow Flycatcher nesting habitat occurs within the Middle Rio Grande valley: Occupied and potential habitat is primarily composed of riparian shrubs and trees, chiefly Goodding's willow and peachleaf willow, Rio Grande cottonwood, coyote willow, and saltcedar. The nearest known breeding Southwestern Willow Flycatchers from the project area occur along the Rio Grande near San Juan Pueblo and Isleta Pueblo 30 miles upstream and 55 miles downstream, respectively. Table 6 summarizes the New Mexico survey and nest monitoring for 2003.

Whooping Crane

The Whooping Crane was listed as endangered with critical habitat by the U.S. Fish and Wildlife Service in 1978 (43 FR 20938) due to the destruction of wintering and

Table 6: Southwestern Willow Flycatcher survey results and nest monitoring summary for the Rio Grande, New Mexico, 2003.

Site/Reach	Estimated # of birds	Estimated # of territories	Nests Found	Nest Success
Sevilleta NWR/ La Joya	26	17	12	4 successful; 7 failed 1 unknown.
San Acacia/ Escondida	0	0	0	N/A
Neil Cup - Bosque del Apache NWR	0	0	0	N/A
Bosque del Apache NWR	4	3	1	1 successful
San Marcial	156	86	98	49 successful 47 failed 2 unknown

Source; pers.comm.. Rob Doster 2004

breeding habitat, hunting, collisions with power lines and fences, specimen collecting and other human disturbance. The bird once ranged over most of North America, but probably never occurred in large numbers. By the 19th century, only a few thousand birds survived. Whooping Cranes were not sighted in New Mexico after 1938 until an experimental reintroduction was initiated in 1975.

The Middle Rio Grande was the wintering area of the experimental Rocky Mountain population. Within the Bosque del Apache National Wildlife Refuge, all areas at or below 4,600 feet in elevation have been designated critical habitat for the whooping crane. This designation includes most of the floodplain including the riverine and riparian zone. During the winter months, Whooping Cranes will use sandbars in the Rio Grande near the refuge and isolated areas outside the refuge for night roosting.

3.09 CULTURAL RESOURCES

The proposed project is within the Northern Rio Grande archaeological region. This brief cultural overview is based on the four-volume set of archaeological research at Cochiti Dam conducted in the mid-1970s, edited by Biella and Chapman (e.g., Biella and Chapman 1979). The approximately 12,000 years of cultural interaction in this area can be subdivided into broadly defined periods based on constellations of artifacts recovered archaeologically. Given the ecosystem of the Pueblo de Cochiti area and of the

surrounding region, the remains associated with rather short-term resource exploitation by hunter-gathers represent the first 10,000 years. While the earliest sites, dating between approximately 10,000 B.C. and 5,500 B.C., represent the Paleo-Indian big game hunters, no sites from this time period occur in the area of the proposed project. Most Paleo-Indian sites in the greater Albuquerque region have been recorded during survey, although some excavation occurred prior to housing construction in Rio Rancho, and one site is currently being excavated during the summer by the University of New Mexico. The range of site types identified includes tool manufacture, resource processing related to hunting, and base camps occupied for longer periods of time. Many of these sites are on high ground with unobstructed views.

The Archaic Period extends from approximately 5,500 B.C. to A.D. 400 and represents a continuation of the hunting-gathering adaptation; however, the population of animals is similar to those found today. This represents the primary difference from the preceding Paleo-Indian Period. Both large and small animals were hunted and trapped. Based on the increasing presence of manos and metates, it is clear that the processing of plants became more important later in the period. Towards the end of the Archaic, longer-term habitation sites that include shallow pit houses are found in central New Mexico. Two major changes occurred towards the end of the Archaic. Indications of maize appear in the archaeological record by about 2,000 B.C.; however, maize became relatively more common after 1,000 B.C. Finally the bow and arrow appeared about A.D. 500 and replaced the spear as the primary weapon. Archaic-period sites were recorded during the 1970s archaeological survey of the flood pool area prior to the construction of the dam.

The Archaic Period is succeeded by the Ancestral Pueblo Period. Depending on the location within New Mexico, between three and five major phases are recognized and are based on a host of characteristics, including house forms and construction techniques, settlement patterns, pottery types, and other elements of material culture. While hunting and gathering continued, reliance on agricultural products continually increased. Pit house villages with larger communal structures indicate larger social groups living in one location for longer periods of time. Small, surface living and storage rooms with below-ground communal and religious structures augment and eventually replace the pit house villages. As populations increased, these small houses were replaced with large buildings of up to several hundred rooms made of rock and/or adobe. Not all of the rooms were necessarily occupied at once.

The Developmental Period dates between A.D. 600 and 1200 and can be subdivided into Early and Late depending on the predominance of pit house or above-ground architecture. Early in the period the associated ceramics are similar to those found throughout northern New Mexico; later in time the stylistic attributes, including paint, design, and temper, become more locally diagnostic. The Coalition Period, A.D. 1200 to 1325 marked a more intensive use of the Pajarito Plateau, north of the project location. There was a change from mineral- to carbon-painted pottery and, as suggested by the number, size, and distribution of larger permanent habitation and seasonally-specific, special-use sites, there was a marked increase in the population. The Classic

Period, A.D. 1325 to 1600, spans the time of the widest settlement distribution, the largest sites, and the earliest Spanish contact, beginning with the Coronado Expedition in 1540. After several expeditions by others, the first permanent Spanish occupation in New Mexico began in 1598 near the present location of San Juan Pueblo. Glaze-painted pottery was introduced for the first time. Increasingly severe and widespread droughts and impacts from European colonizers disrupted the native populations. There was a gradual retrenchment into an aggregated settlement pattern.

The Historic Period is characterized by rapid change and acculturation between the Indians, Spanish, Mexicans, and Americans. The Period dating from about A.D. 1540 to the present can be divided into seven phases reflecting aspects of social interaction; one such scheme includes Spanish exploration, followed by Colonization, the Pueblo Revolt, Spanish and Mexican Colonial, United States Territorial, and Statehood.

Currently, there are four major linguistic groups among the Pueblo Indians of the Southwest—Zuni, Uto-Aztecan (Hopi), Tanoan, and Keres. There are seven major dialects of Keres, including the western groups of Acoma and Laguna; and the eastern groups of Santo Domingo, San Felipe, Cochiti, Zia, and Santa Ana. There are numerous opinions concerning the location of the Cochiti and Santo Domingo ancestor's prior to A.D. 1300. Based on a variety of materials recovered archaeologically, including ceramics, many believe that their ancestors originated from the general area around Mesa Verde, and the Four Corners of New Mexico, Colorado, Arizona, and Utah. After leaving the four-Corners region, the Keresan ancestors of Cochiti and Santo Domingo may have moved through the Puerco River area and the Jemez Mountains, including the Frijoles Canyon vicinity. There is general agreement that many Keresan ancestors lived in the Galisteo Basin particularly in and around the region of turquoise deposits and San Marcos Pueblo (Akins 1993).

Archaeological Survey

No archaeological survey was conducted at the Al Black Recreation Area as the entire area was originally disturbed by the construction of the stilling basin and alignment of the river channel in the mid-1970s. Subsequently the area was impacted by the construction of the facilities that will be removed by the planned action. None of the features proposed for removal and disposal are either of sufficient age or of architectural merit to warrant any consideration under the National Historic Preservation Act. There will be no impact to the archaeological or architectural resources of the area.

The Cochiti Recreation Area was surveyed for archaeological sites in the mid-1970s during the original survey of the reservoir pool and no sites were discovered in this vicinity. No archaeological survey was conducted at the Cochiti Recreation Area in 2004. The entire location is developed and is use for boat launching and parking. Other than the fishing pier in the lake and a few picnic tables and shade structures, no new facilities will be constructed. There will be no impacts to cultural resource as a result of using this location for additional fishing.

The Tetilla Peak Recreation Area was surveyed for archaeological sites in 1975 during the original survey of the reservoir location. As this survey was 29 years ago and this area was under water several times during this period, archaeologists from the Albuquerque District surveyed the existing access road and the location of the proposed action in March 2004. Based on the existing recorded data and site files, it appeared that two sites, LA 13043, a lithic scatter of unknown temporal or cultural affiliation, and LA 13038, also a lithic scatter of unknown temporal or cultural affiliation, were within the right-of-way of the access road. This road was constructed in the early 1980s (Douglas Bailey, Personnel communication). The survey of 2004 determined that Site LA 13043, was impacted by the access road construction; however, site LA 13038 was incorrectly located on the map. It is more than 50 meters east of the road and has not been impacted by any Corps of Engineers' activities.

Archaeologists conducted an intensive survey of the existing access road and approximately 15 m of undisturbed land on either side it. The archaeologists were spaced 5 to 8 m apart. Sites and isolated artifacts were recorded to sub-meter accuracy with a Trimble Pathfinder Pro XRS, differentially corrected. Three new sites were discovered during the road survey. Each one was a lithic scatter with no diagnostic artifacts; the majority of the lithic material was fine grain basalt. Two of the sites (COE-01 and 02) are located along ridge tops with long talus slopes where artifacts have been dispersed by erosion. The artifacts occur both on the slope and, in somewhat greater numbers, in the gully at the bottom. The access road cuts through the area where the artifacts are traversing down the talus. The artifact density on the slope is low and only a few may have been impacted by the road construction; however, they were already eroded from their primary context. The third site (COE-03) is on level ground on the top of a ridge, and the road cut through it. Approximately 16.4 acres (6.6 hectares) were intensively surveyed. In addition to the three sites, 127 isolated artifacts were recorded.

A spacing of 10 to 15 m between archaeologists was maintained during the intensive survey of the preferred plan for the fishing pier on the Tetilla Peak side of the reservoir. The 1975 survey discovered no sites in this area. The survey of 2004 confirmed the results of the 1975 survey. There are no sites in or adjacent to the location of the preferred plan. Approximately 0.2 acres will be disturbed by the construction of a parking lot and picnic facilities adjacent to the fishing pier. The road between the early 1980s access road and the water is a portion of the haul road used by large trucks during the construction of the dam. An area of 10.9 acres (4.4 hectares) was surveyed. This large area was surveyed in order to insure that no archaeological sites occurred in a buffer zone around the preferred location. The ground visibility was excellent as it varied from 90 to 100 percent. With the exception of several isolated artifacts, no archaeological material was observed within the 10.9 acres.

Prior to improvement of the access road the remaining portion of LA 13043 will be tested to determine if the site retains sufficient integrity to warrant eligibility for the National Register of Historic Places (NRHP). There will be no additional impact to the slope containing artifacts eroding from sites COE-01 and 02. Site COE-03 will be tested

to determine its NRHP eligibility. With the exception of the isolated artifacts, there are no cultural resources in or adjacent to the proposed fishing pier location.

From an archaeological perspective, the planned action for the fishing pier locations on either side of the lake are preferred as there will be no effect to any archaeological resources.

3.10 WETLANDS AND FLOODPLAINS

Executive Order 11990 (Protection of Wetlands) requires the avoidance, to the extent possible, of long- and short-term adverse impacts associated with the destruction, modification, or other disturbances of wetland habitats. No wetlands would be affected by the proposed work at the Al Black Recreation Area or at the proposed universally accessible fishing facilities at the Cochiti and Tetilla Peak Recreation Areas.

Executive Order 11988 (Floodplain Management) provides Federal guidance for activities within the floodplains of inland and coastal waters. Preservation of the natural values of floodplains is of critical importance to the nation and the State of New Mexico. Federal agencies are required "to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management." The proposed work would not contribute to or result in any additional development of the Rio Grande floodplain or the shoreline of Cochiti Lake.

3.11 INDIAN TRUST ASSETS

Indian Trust Assets are legal interests in property held in trust by the United States for Indian tribes or individuals. Examples of trust assets include land, minerals, hunting and fishing rights, and water rights. The United States has an Indian Trust Responsibility to protect and maintain rights reserved by or granted to Indian tribes or individuals by treaties, statutes, executive orders, and rights further interpreted by the courts. This trust responsibility requires that all federal agencies take all actions reasonably necessary to protect such trust assets.

3.12 RECREATION AND AESTHETICS

The Memorandum of Understanding dated November 1965, between the Pueblo and the Corps provided for the construction of public recreation facilities at Cochiti and Tetilla Peak Recreation Areas. They were constructed in 1974. The Amended Memorandum of Understanding, dated December 1975, provided for the construction of public access and a vault toilet at the Outlet Channel Area (Stilling Basin). These facilities were also constructed in 1974, prior to the Amended Memorandum of Understanding dated 1975.

Fishermen travel from throughout central New Mexico to fish rainbow and German brown trout in the outlet channel, which is stocked by New Mexico Department of Game and Fish. This fishing opportunity is unique to the high desert locale and is

made possible by the release of cold water from the bottom of Cochiti Lake through the dam gates. The New Mexico Department of Game and Fish initiated stocking rainbow trout at the site in 1984.

In the latest data available (pers. comm. Richard Hansen 2004b), German brown trout fingerlings (1-3 inches) were stocked in 1986, 1987, 1989, 1992 and 1998. The last stocking contained 99,000 fingerlings. New Mexico Department of Game and Fish has stocked the outlet channel with approximately 120,000 rainbow trout from January 1998 through January 2004, averaging 800 per month. The fish are a “catchable” size of approximately 9 to 10 inches. The rainbow trout are produced in state hatcheries. The German brown trout are surplus fish from federal hatcheries. Trout are not stocked in the reservoir due to predators and the unfavorable thermal regime of the lake (see New Mexico Department of Game and Fish letter dated November 5, 2003 in Appendix A).

During the 1997-1998 fishing license years, approximately 10,000 anglers fished the outlet channel. In the 1998-1999-license year, approximately 9,000 anglers fished the site. A total of 37,000 anglers fished Cochiti Lake from 1997 through 1999 (pers. com. Richard Hansen 2002).

Other recreation activities within the area include sightseeing, picnicking, and wildlife viewing. Bald Eagles arrive in late fall and leave by spring. Ospreys arrive in early spring and stay through the summer. In 1998, Public Service Company of New Mexico (PNM) installed an osprey nesting platform atop a power line pole on the east side of Highway 22, just south of the outlets works. Three Ospreys fledged from this site in 1998. There were no reported fledglings in 1999 or 2000. In 2001, there was one reported fledgling with at least two fledglings reported in the spring of 2002. In New Mexico, there are currently 11 nesting Osprey pairs. The majority of nesting Osprey are found at three northern New Mexico reservoirs - Heron, El Vado and Navajo.

As noted in Table 7, the highest visitation occurs at the Al Black Recreation Area during the months of April through September. Overall, there is sustained public use of the area throughout the year. The Visitation Estimation and Reporting System (VERS) utilized by the Corps defines a “visit” as the entry of one person into a recreation area or site to engage in one or more recreation activities. A “visit” is a “head count” of visitors and does not measure amount of use or length of stay.

The Visitation Estimation and Reporting System program estimates percentages of visitors participating in various activities based on a recreation use survey conducted in 1991. Visitors entering a recreation area such as Al Black were surveyed to document the types of recreational activities that they planned to participate in during their visit. The following are the results of the types and percentages of recreational activities that visitors planned to participate in while visiting the Al Black Recreation Area:

Picnicking	2.06%	Sightseeing	55.25%
Fishing	37.86%	Swimming	4.82%

Table7. Cochiti Outlet Works recreation public day use (no camping) visits by month and year.

MONTH	YEAR							
	1996	1997	1998	1999	2000	2001	2002	2003
January	2,944	1,206	5,695	1,571	2,853	3,828	3,183	2,546
February	4,230	3,786	7,433	1,464	5,696	4,808	5,671	3,008
March	5,456	32,280	2,095	1,764	7,117	7,194	7,358	8,771
April	5,192	8,560	6,536	5,626	7,322	8,211	7,042	8,398
May	6,599	8,532	7,387	7,330	7,250	9,613	8,183	11,213
June	5,646	10,307	10,499	7,094	6,196	8,783	8,254	11,179
July	7,240	14,413	11,407	9,340	5,963	11,075	8,574	11,017
August	7,512	12,556	ND*	9,330	5,838	10,023	4,667	9,107
September	6,650	9,344	ND*	8,216	5,399	8,054	5,871	8,941
October	5,165	5,358	6,794	3,519	6,570	4,952	6,066	7,085
November	2,682	2,336	0+	3,541	5,803	5,385	4,418	5,035
December	3,071	2,349	2,349	2,529	3,691	3,834	1,324	3,280
Total	62,387	111,027	70,337	61,324	69,698	85,760	70,611	89,580

ND* = No Data

+ = Outlet Works closed to public for repairs

Source: USACE 2002.

The differences between the Corps' and the New Mexico Department of Game and Fish's angler estimates of use at the Al Black Recreation Area result from different sampling methods (pers. comm. Michael Carey 2004). The Corps' estimate is based on their 1991 Visitation Estimation Reporting System survey. VERS accounts for ingress and egress on the same day as two separate visits. The New Mexico Department of Game and Fish estimates are derived from continual field sampling.

As described in Section 1.03 above, the Outlet Works area is a component of the dam and appurtenant structures and contains very little natural, aesthetic values. The Cochiti Lake shoreline is essentially unchanged since the filling of the reservoir and is in harmony with the surrounding aesthetics of the high desert ecosystem.

3.13 NOXIOUS WEEDS

The Federal Noxious Weed Act of 1974 (Public law 93-269; U.S.C. 2801) provides for the control and eradication of noxious weeds and their regulation in interstate and foreign commerce. Executive Order 13112 directs Federal agencies to prevent the introduction of invasive (exotic) species and provides for their control and to

minimize the economic, ecological, and human health impacts that invasive species cause.

Most of the area within the boundaries of the Al Black Recreation Area has been covered with parking lot or landscape gravel, concrete, or rip rap, thereby greatly limiting the opportunity for establishment of noxious weeds or other vegetation. The lake shoreline contains native and exotic plant species normally found in the surrounding natural environment.

3.14 HAZARDOUS AND TOXIC WASTE

On February 3, 2004 a representative of the Corps' Geotechnical Branch visually inspected the proposed replacement recreation sites at Cochiti Lake. Both sites were free of debris and waste items. No staining or discoloration of the ground at any of these option locations was observed.

SECTION 4

FUTURE CONDITIONS WITHOUT THE PROJECT

Future conditions without project implementation would be projected to characterize "no action" and its effects. If no action were taken, the Al Black Recreation Area would remain in place and the proposed replacement recreation areas at the Cochiti and Tetilla Peak Recreation Areas would not be constructed. The Al Black Recreation Area's primary benefits of coldwater fishing, picnicking, bird and wildlife watching, and other forms of outdoor recreation compatible with the site and its facilities would continue to be available to the public. Future operations and maintenance (O&M) costs would remain constant, adjusting for inflation. The Corps would not plan to upgrade or develop additional recreation facilities at the site in the near future. Expected recreational use of the site would also remain constant with the probability of a slight increase in visitation with increases in tourism and the regional population. Therefore, there would be no change in environmental conditions in the area without the Planned Action.

The annual operating cost at the Al Black Recreation is estimated at \$30,000. This cost includes weekly cleaning and trash removal, weekday and weekend patrols by Corps Park Rangers, and bi-annual clean out of vault toilets.

SECTION 5

FORSEEABLE ENVIRONMENTAL EFFECTS OF PLANNED ACTION

5.01 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

The Planned Action is evaluated based on estimated changes to employment earnings, recreational benefits, and and/ or population dynamics in the local area. If

appreciable population changes could result (greater than 5 percent), then potential secondary effects on public services are considered.

Implementation of the Planned Action is expected to offset and improve the recreation losses associated with the closure of the Al Black Recreation Area, and would have negligible adverse effects on the regional economy. Material acquisition is limited to replacing the Al Black Recreation Area with two equivalent facilities elsewhere in the area. No permanent construction or government positions are being created; consequently, there would be no immediate or long-term change in employment or population. No changes to regional socioeconomic patterns or trends would occur.

Under the Planned Action, there may be an improvement in the quality of recreation experience currently enjoyed by visitors to the Al Black Recreation Area. This is attributable to the increased aesthetic quality of the Planned Action over the current conditions. For purposes of this analysis, it was assumed that facilities (fishing locations, parking, toilet facilities) constructed in the Planned Action are similar to those currently at the Al Black Recreation Area. However, current plans for the Planned Action include features that are superior to those at the Al Black Recreation Area, such as two fishing piers.

Officials from the Corps indicated that the Planned Action had no detrimental effects on the quality of the recreation experience. In a qualitative sense, they indicated that the recreation experience offered by the Planned Action would be of greater value due to a) increased number of recreation activities that could be undertaken under the Planned Action, such as pier fishing, covered picnicking, and photography, and b) the more natural environment provided by the location described in the Planned Action.

The Corps uses the Unit Day Value (UDV) as one method to estimate demand for and willingness to pay for recreational facilities (COE, 2000). The Unit Day Value technique assumes that travel times and costs are implicitly computed in the valuation, and is frequently used where visitation surveys showing origin of recreation visit is unavailable. Five judgment factors are evaluated to determine a total point value and by extension, the willingness to pay for a given recreational facility. Those factors are Recreation experience, Availability of opportunity, Carrying capacity, Accessibility, and Environmental. For purposes of the May, 2002 analysis, the Carrying capacity and Accessibility criteria were assumed to be similar to existing conditions. Hence, the relocation and construction outlined in the Planned Action would presumably have the most significant effects on the Recreation experience, Availability of opportunity, Carrying capacity, and Environmental factors. In the March, 2004 analysis, it was noted that the sites on Cochiti Reservoir are compliant with the Americans with Disabilities Act (ADA). Table 8 identifies the criteria used in conducting Unit Day Value assessments.

A Unit Day Value assessment of the Al Black Recreation Area was conducted in March of 2002. Two assessments of the Planned Action were conducted. The first was in May, 2002, when the Peña Blanca site was considered to be the location of the replacement facilities. The second was in March 2004, when the two sites on Cochiti

Table 8. Criteria used in Unit Day Value Assessments.

Criteria	Judgment Factors				
Recreation experience(1)	Two general activities(2)	Several general activities	Several general activities; one high quality value activity(3)	Several general activities; more than one high quality value activity	Numerous high quality value activities; some general activities
Total points 30	0-4	5-10	11-16	17-23	24-30
Availability of opportunity(4)	Several within 1 hr. travel time; a few within 30 min. travel time	Several within 1 hr. travel time; none within 30 min. travel time	One or two within 1 hr. travel time; none within 45 min. travel time	None within 1 hr. travel time	None within 2 hr. travel time
Total points 18	0-3	4-6	7-10	11-14	15-18
Carrying capacity(5)	Minimum facility for development for public health and safety	Basic facility to conduct activity(ies)	Adequate facilities to conduct without deterioration of the resource or the activity experience	Optimum facilities to conduct activity at site potential	Ultimate facilities to achieve intent of selected alternative
Total points 14	0-2	3-5	6-8	9-11	12-14
Accessibility	Limited access by any means to site or within site	Fair access, poor quality roads to site; limited access within site	Fair access, fair road to site; fair access, good roads within site	Good access, good roads to site; fair access, good roads within site	Good access, high standard road to site; good access within site
Total points 18	0-3	4-6	7-10	11-14	15-18
Environmental factors(6) that significantly lower quality(7)	Low esthetic factors(6) that significantly lower quality(7)	Average esthetic quality; factors exist that lower quality to minor degree	Above average esthetic quality; any limiting factors can be reasonably rectified	High esthetic quality; no factors exist that lower quality	Outstanding esthetic quality; no factors exist that lower quality
Total points 20	0-2	3-6	7-10	11-15	16-20
Total points 100					

- (1) Value for water-oriented activities should be adjusted if significant seasonal water level changes occur.
- (2) General activities include those that are common to the region and that are usually of normal quality.
This includes picnicking, camping, hiking, riding, cycling, and fishing and hunting of normal quality.
- (3) High quality value activities include those that are not common to the region and/or Nation, and that are usually of high quality
- (4) Likelihood of success at fishing and hunting.
- (5) Value should be adjusted for overuse.
- (6) Major esthetic qualities to be considered include geology and topography, water, and vegetation.
- (7) Factors to be considered to lowering quality include air and water pollution, pests, poor climate, and unsightly adjacent areas.

CoE 2004

Reservoir were considered to be sites of the replacement facilities. A discussion of those factors and their applicability to Al Black and the Planned Action follows:

Recreation Experience: This criterion is a judgment call that asks how many recreation experiences are provided by the proposed recreation project. The existing area, located at the outlet works of Cochiti reservoir, provides opportunities for fishing, picnicking, some sightseeing of the outlet works, and that's about it. The officials indicated that the Planned Action, at the margin, provides for more recreation activities than the Al Black Recreation Area. In a qualitative sense, this makes sense, as the proposed locations provide pier fishing, picnic tables with shelters, that the Al Black Recreation Area does not provide. The fishing platforms are likely the principal reason that the Planned Action is believed to provide a unique, high value activity. There is an expected loss of cold-water fishing, but fishing as a recreation activity is not lost due to the increased number of shoreline and platform-based fishing.

Existing Condition (3/02)		Planned Action (3/4)	
Mean	9.8	Mean	13.5
Median	7	Median	10.5
Mode	16	Mode	#N/A
Variance	33.2	Variance	76.33333
STD	5.761944	STD	8.736895
STD = Standard Deviation, #N/A = Not Available			

Availability of opportunity: This criterion attempts to measure the availability of similar recreation experiences. The results indicated that the Planned Action was generally not more or less unique than the Al Black Recreation Area. Qualitatively, this result could have been either a net increase in value or a push. Cochiti Reservoir already provides some recreation experiences, and at the margin, adding two more sites to a lake with a recreational use in place already may not provide a benefit to the recreation user.

Existing Condition (3/02)		Planned Action (3/04)	
Mean	6.2	Mean	6.75
Median	7	Median	6.5
Mode	#N/A	Mode	6
Variance	12.7	Variance	0.916667
STD	3.563706	STD	0.957427

Carrying capacity: This criterion assesses whether the facility is adequate for the recreation demand. A nice location that's ill suited for the crush of visitors provides less of a pleasant recreation experience than one with spaces, parking, and other amenities necessary for recreation. The results indicated that the Planned Action, at the margin, would be better suited to handle even more visitors than the Al Black Recreation Area current setup. Each site on Cochiti Reservoir has parking for 20 vehicles, toilet facilities, three sheltered picnic tables, and the fishing platform. The Al Black Recreation Area has more space for parking, but fewer (uncovered) picnic tables, and only one toilet facility.

Existing Condition (3/02)		Planned Action (3/04)	
Mean	6.8	Mean	9.75
Median	5	Median	9.5
Mode	11	Mode	#N/A
Variance	16.2	Variance	2.916667
STD	4.024922	STD	1.707825

Accessibility: This criterion measures the ease or difficulty of getting to and throughout the recreation site. Here, the results suggested that the Planned Action isn't easier or more difficult to get to than the Al Black Recreation Area. Each venue was considered to provide good access to the recreation site, and good access within the site. The sites on Cochiti Reservoir will be accessed by paved roads, with paved parking, and will be compliant with the Americans with Disabilities Act (ADA).

Existing Condition (3/02)		Planned Action (3/04)	
Mean	14.6	Mean	15.25
Median	14	Median	15
Mode	14	Mode	15
Variance	6.8	Variance	1.583333
STD	2.607681	STD	1.258306

Environmental: This criterion evaluates the esthetic quality of the recreation experience. This category contained the most significant benefit of the Planned Action, which puts two fishing venues on a lake to replace one fishing site located in the outlet works of Cochiti Dam. The respondents believe the Planned Action venues will be more visually pleasing than the Al Black Recreation Area. Qualitatively, this makes sense, as the sites on Cochiti Reservoir are in a more natural lakeside environment. The Al Black Recreation Area is a gravel parking lot lining a straightened channel lined with safety railing, in the shadow of Cochiti Reservoir.

Existing Condition (3/02)		Planned Action (3/04)	
Mean	6.8	Mean	13
Median	6	Median	11
Mode	#N/A	Mode	11
Variance	24.7	Variance	22
STD	4.969909	STD	4.690416

The Al Black Recreation Area is considered to be an excellent locale for cold-water fishing, and substitute sites may lack this characteristic. A visitation survey conducted by the Corps (cited elsewhere in this report) indicates that roughly 38% of visitors visit the Al Black Recreation Area to fish. Presumably, a subset of fishers (not available for this report) attends this site specifically for the cold water fishing experience. Comments made during public meetings indicate the cold-water fishing opportunity may be a unique and highly valued activity. Consultation with Corps officials indicate that, notwithstanding the loss of a cold water fishing opportunity and substitution with a lakeside (warmer water) fishing opportunity, the net value of the recreation experience provided by the Planned Action is greater than the value of the recreation experience provided by the Al Black Recreation Area, as is indicated by the following:

Existing Condition (3/02)		Planned Action (3/04)	
Mean	44.2	Mean	58.25
Median	43	Median	52.5
Mode	#N/A	Mode	#N/A
Variance	157.7	Variance	236.9167
STD	12.55787	STD	15.3921

After a recreation site is assessed using Unit Day Values, we can convert the total points to a dollar value, or, compare the total value lost by closing the Al Black Recreation Area to the total value gained by creating two alternative recreation sites on Cochiti Reservoir. That comparison provides the marginal benefit or cost of implementing the Planned Action. Applying the marginal improvement for each of the five UDV factors to the FY 2004 Unit Day Valuation dollar estimates, these figures indicate that the net benefits (Benefits of Planned Action sites less benefits lost by closing Al Black Recreation Area) per visitor day are somewhere between \$0.59 and \$1.43.

There is no significant correlation between population increases in the local area and Region of Influence, and visitation to the Al Black Recreation Area (see Table 9). Bernalillo County's population had a greater probability of predicting visitation, but that relationship was also deemed insignificant. However, study team members believed that visitation to the site could increase due to an unspecified substitution effect from other fishing areas. Any projection in future visitation can only be made in qualitative terms, but since the Planned Action provides a qualitatively better recreation experience for the visitor, disregarding any increase in travel time to the recreation site, visitation is not expected to diminish as a result of implementing the Planned Action.

Under the No Action Alternative, the Al Black Recreation Area remains open. No economic loss from the closure of the recreation area would occur. Using the recreation valuation estimates to compute a Unit Day Valuation, multiplied by the 2000 estimate of visitation, continued operations of the Al Black Recreation Area would create an average annual economic recreation benefit of between \$306,000 and \$491,000 with a mean value of \$411,000 (FY 2004 price level).

Under the Planned Action, the Al Black Recreation Area would be closed with substitute facilities created on Cochiti Reservoir. An economic loss from the closure of the recreation area would occur, but the creation of two replacement facilities more than offsets that loss. Using the recreation valuation estimates to compute a Unit Day Valuation, multiplied by the 2000 estimate of visitation, closure of the Al Black Recreation Area and construction of replacement facilities would create an average annual economic recreation benefit of between \$347,000 and \$591,000 (FY 2004 price level).

Nothing in the Planned Action suggests a diminished recreation experience for visitors, nor any increased costs (i.e. travel time and distance) to reach the recreation site. Absent the substitution of a cold-water fishery with fishing piers over warmer water, cumulative impacts from implementing the Planned Action are considered nonexistent.

Table 9. Population of Bernalillo and Sandoval Counties plus Al Black Recreation Area Visitation

	Bern. Co. Population	Sandoval Co. Population	Al Black Visitation
1994	515700	76125	81938
1995	522195	79794	66685
1996	524576	83125	62387
1997	525206	85856	111027
1998	524686	88037	70337
1999	523472	90253	61324
2000	556678	89908	69698
2001	562458	93883	85760

Source: U.S. Census 1999, CoE visitation data.

To comply with Executive Order 12898, the most recent information available on ethnicity and poverty status in the Region of Influence have been examined and compared to state and national statistics to determine if the Planned Action could disproportionately affect any minority or low-income groups. If any resource impacts had been identified, an analysis of the potential for disproportionately high and adverse impacts to minority and low-income populations would be conducted, comparing the demographics of the affected area to those of the region of comparison.

No significant economic impacts would result under the Planned Action. Therefore, there is no potential to adversely affect either the populations as a whole or any minority or low-income persons.

Effects from the substitution of one fishing facility with a qualitatively equivalent or better location are not expected to affect local employment or earnings. Therefore, no impact to persons of low-income or minority status would result.

Due to the absence of schools or housing on the subject lands, no adverse impacts to children resulting from the implementation of the Planned Action are expected.

No environmental justice considerations arise from the continuation of existing conditions, because local minority and low-income population demographics are expected to persist under the No Action Alternative.

No cumulative adverse impacts on human activities are expected. The Planned Action would not affect community cohesion and no relocations would be required. Conditions that affect minority or low-income persons disproportionately would not be present.

5.02 LAND USES

The proposed project would have no effect on current uses of water for agriculture, ranching, residential, or other activities in the area. State of New Mexico designated uses and standards applied to the Rio Grande would not be affected by the proposed project. Although no designated uses have been defined for the Santa Fe River, the work would not affect the primary uses for livestock and wildlife watering. The Planned Action would affect no prime farmlands.

The land comprising the Al Black Recreation Area would revert from public recreation to exclusive tribal use by the members of the Pueblo and Corps operations and maintenance personnel. This would allow the Pueblo to realize their stated purpose and need to close the area to the public as a step towards preserving community integrity by limiting the use of this land to tribal members for cultural and traditional purposes. As owner of the land, the Pueblo is exercising their legal right to request the Corps to take this Planned Action. The Planned Action would allow this land to be utilized for purposes that would be compatible with the existing uses of most of the surrounding Pueblo land.

This Planned Action would result in a local and regionally significant loss of public recreation land. This loss is significant because of the unique coldwater fishing experience sought after by anglers traveling from Albuquerque, Santa Fe, and other locations in north central New Mexico. The angling opportunity is made possible by the coldwater discharge into the stilling basin from the Cochiti Dam Outlet Works. Although artificial in nature, no other land in the immediate area could provide this highly valued recreation opportunity. As such, the loss of the Al Black Recreation Area land involves a significant and controversial loss of a resource that cannot be mitigated within the geographic scope of this Environmental Impact Statement.

5.03 HYDROLOGY AND WATER QUALITY

There are no waters or wetlands of the Rio Grande that would be impacted by the proposed work at the Al Black Recreation Area. In the event that construction work involved with the proposed shoreline recreation facilities would impact waters or wetlands of Cochiti Lake, Department of the Army Section 404 permit authorization would be obtained through the Albuquerque District Corps Regulatory Branch. If a permit were required for the work, water quality certification under Section 401 of the CWA would be obtained from the New Mexico Environment Department. Construction of the fishing pier and other amenities would not affect the seasonal fluctuations of lake levels.

Project construction would comply with the general conditions of the National Pollutant Discharge Elimination System (NPDES), that is, a Notice of Intent would be filed, and a Storm Water Pollution Prevention Plan for the project would be developed and be kept on file at the construction site and become part of the permanent project record. The Corps would obtain the NPDES permit prior to commencement of construction activities. Compliance with these requirements would ensure that the Planned Action would have no significant effect on the hydrology or water quality of the Rio Grande and/or Cochiti Lake.

5.04 AIR QUALITY AND NOISE

The construction activities associated with the Planned Action would be of limited scope and duration thereby having no significant effects on local environmental conditions. Access roads and disturbed construction areas would be watered as needed to reduce dust levels caused by motor traffic and other construction related earth disturbances. Carbon monoxide and other fossil fuel combustion engine emissions would increase temporarily but not to levels of adverse significance during construction. Localized noise levels would temporarily increase from the use of power equipment but not to a level that would adversely affect human activities or wildlife. Noise and air quality would return to pre-project ambient levels upon completion of the work at the Al Black Recreation Area and Cochiti Lake.

Closure of the Al Black Recreation Area may result in a slight decrease in local traffic and fossil fuel emissions from automobiles and recreation vehicles. This would be due primarily to the diversion of some traffic to the Tetilla Peak fishing facilities. However, the existing traffic level does not present an air quality or noise concern. Therefore, although the slight reduction in vehicular traffic would result in an improvement in air quality or noise in the area, the change would not be considered significant.

It is anticipated that the increased public use at the new recreation facilities at the Cochiti and Tetilla Peak Recreation Areas would result in an insignificant increase in noise and associated fossil fuel emissions from vehicular traffic. Both facilities now accommodate private automobiles and small to mid-sized recreation vehicles. Such

vehicles have relatively low fossil fuel emission levels and operation noise levels. It is not anticipated that the number of vehicles traveling to and from both recreation facilities would be at a level that would adversely affect ambient air quality in the immediate area. The increase in local traffic should not disrupt the generally rural and quiet nature of the surrounding area. Therefore, it is anticipated that the project would have no significant long-term effects on sound and noise levels at Cochiti Lake.

5.05 BIOLOGICAL RESOURCES

Upgrading of existing road access and parking areas (if necessary), and the installation of public fishing facilities and amenities at the Cochiti and Tetilla Peak sites may disturb vegetation comprised of bunchgrasses, tumbleweed, rabbit brush, pigweed/ironweed, punctureweed (goatheads), cocklebur, and scattered trees that include saltcedar, cottonwood, and Siberian elm. Removal of any cottonwood trees would be avoided.

The Al Black Recreation Area site has been manipulated for human use since the Cochiti Dam construction was initiated. The landscape was stripped of vegetation, graded, and replaced with graveled parking lots, comfort stations with concrete platforms, concrete access walkways, and rip rap armoring for stabilization along the stilling basin banks. The site contains no biological resources of significance. As described previously, the area would be restored to more natural conditions. This work would have a positive, although not significant, effect on the biological resources of the site and surrounding area.

Construction of the new recreation shoreline facilities would involve limited disturbance to soils and vegetation. The existing access road may be paved to provide a smoother roadbed but all work would be confined to the present dimensions. New parking areas (if necessary) would be paved with permeable material to reduce runoff during precipitation events. Although the need for landscaping is not anticipated, only native vegetation would be planted when necessary. While recreational use of the area is now permitted on the lakeshore, it is anticipated that human use at the new recreation facilities would increase due to the closure of the Al Black Recreation Area and with the construction of improved vehicle access, parking, fishing access, and other public recreation facilities. These limited physical alterations are in keeping with the recreation purposes of the public use areas and would result in minimal disturbance to the existing natural landscape and wildlife habitat. The construction of the recreation facilities would not have a significant effect on the existing biological resources of the lake shoreline.

5.06 ENDANGERED AND PROTECTED SPECIES

Bald Eagle

Currently, due to the absence of tall trees, no Bald Eagle perching or roosting sites have been observed at the Al Black Recreation Area. Potential perching and roosting habitat are present just below the Highway 22 Bridge. This habitat would not be

impacted, as project construction disturbance is limited to the area upstream from the bridge on either side of the stilling basin for the Outlet Works.

The Bald Eagle is a winter resident of New Mexico and is frequently observed foraging on the lake. Winter use of the recreation facilities by the public on the lake is minimal due to unfavorable weather conditions. The Tetilla Peak Recreation Area is closed to the public during the winter, thereby further reducing human activity in the general area. It is not anticipated that low daily winter human use within the Cochiti Recreation Area would increase to a level that would disrupt the foraging habits of the Bald Eagle. In addition, there are no trees suitable for perching around the lake shoreline where the bird may be resting and disturbed by the presence of humans.

To minimize the potential for disturbing Bald Eagles that may be present during construction, efforts would be made to schedule all work outside of the Bald Eagle high use months of December, January, and February. If a Bald Eagle is present within 0.5 mile of the construction sites in the morning before project activity starts, or following breaks in work, the contractor would be required to suspend all activity until the bird leaves of its own volition, or a Corps biologist, in consultation with the U.S. Fish and Wildlife Service, determines that the potential for harassment is minimal. However, if an Eagle arrives during construction activities, or if an Eagle is beyond 0.5 mile of the site, construction would not be interrupted. If Bald Eagles were found consistently in the immediate project areas during the construction period, the Corps would contact the U.S. Fish and Wildlife Service to determine whether formal consultation under the Endangered Species Act is necessary.

Implementation of these measures would preserve undisturbed Bald Eagle use of the lake and surrounding area while the bird is present. Therefore, the proposed work at the Al Black Recreation Area and at Cochiti Lake may affect, but is not likely to adversely affect the Bald Eagle and its habitat.

By letter dated May 17, 2004, the U.S. Fish and Wildlife concurred with this determination (see Appendix B). As requested in their letter, the Corps would contact them if 1) future surveys detect listed, proposed or candidate species in habitats where they have not been previously observed; 2) the project is changed or new information reveals effects of the actions to the listed species or their habitats to an extent not considered in their evaluation; and 3) a new species is listed that may be affected by the project. This concluded consultation under Section 7 of the Endangered Species Act of 1973.

Southwestern Willow Flycatcher

The Outlet Works Area extends from the base of the dam and continues 900 feet downstream to the Highway 22 Bridge. Within this reach of the river the riparian vegetation outside of the channel has been removed and both banks permanently armored with large riprap for stabilization. In addition, the riparian zone is not subject to overbank flooding and saturated soils are not absent. The Southwestern Willow

Flycatcher may be present in the general area during seasonal migration but, due to lack of vegetation at the project site, the bird would not likely be found within the limits of the Al Black Recreation Area. Although riparian vegetation is present west of the channel and south of Highway 22, this area would not be affected by the construction work. Therefore, the proposed construction work at Al Black would have no effect on the flycatcher.

As described in Section 3.07 above, the shorelines of Cochiti Lake in general and at the Cochiti and Tetilla Peak Recreation Areas contain scrub vegetation with little or no overstory species that would provide potential habitat for the flycatcher. Therefore, the proposed work would have no effect on the Southwestern Willow Flycatcher.

Whooping Crane

Since there are no longer any birds in the experimental Rocky Mountain Population in the Middle Rio Grande, the proposed work would have no effect on the Whooping Crane.

5.07 RECREATION AND AESTHETICS

Closing the Al Black Recreation Area would result in the significant loss of existing beneficial public recreational opportunities including fishing, picnicking and wildlife viewing. The coldwater fishery available at this site is unique to the high desert of central New Mexico. Besides the Al Black area, the nearest universally accessible coldwater fishing for Albuquerque/Santa Fe anglers is at the US Forest Service facilities on the Jemez River, approximately 35 miles from Interstate 25 at Bernalillo, New Mexico and 65 miles from Cochiti Lake. The New Mexico Department of Game and Fish also stocks trout at the outlet works of Abiquiu Dam, in the Rio Grande near Velarde, and in the ditches in Bernalillo County (only during the winter months).

The New Mexico Department of Game and Fish is concerned about any loss of existing public fishing opportunities (pers. comm. Richard Hansen 2002 and New Mexico Department of Game and Fish December 4, 2002 letter in Appendix D). As stated in their letter of November 5, 2003 (Appendix A), a consideration in moving Al Black users to Cochiti Lake proper is comparability of experience. Their surveys indicate that more than 70% of New Mexico anglers prefer trout fishing to fishing for other species. Thirty five percent of New Mexico anglers prefer to fish in streams and rivers. Those anglers using the Al Black Recreation Area fall within these two groups and fishing in Cochiti Lake does not provide the same angling experience. Therefore, the coldwater fishing experience at the Al Black Recreation Area would be replaced with “out-of-kind” warm water reservoir fishing.

The New Mexico Department of Game and Fish also commented that initiating a (*coldwater*) stocking program on the lake is not a feasible alternative. They instituted a winter trout stocking program in the 1970’s but discontinued their efforts in 1991 as it

was determined to be an ineffective management strategy due to the thermal regime of the lake and the abundance of large, piscivorous (fish-eating) fish.

Comments received during the public review of the Draft Environmental Assessment and in the public meetings confirmed that closure of the Al Black Recreation Area to the public is highly controversial. A number of petitions with signatures also were received that expressed opposition to the closure. (See Appendixes E, G, H, and I for details.)

The adverse effects to public recreation resulting from the Planned Action would be only partially offset by establishing the proposed shoreline recreation areas on Cochiti Lake. These efforts would replace lost public human use amenities by installing new facilities that are easily and universally accessible in convenient locations. These sites would provide recreational opportunities similar to those at Al Black including fishing, picnicking, bird and wildlife viewing, and sightseeing. Members of the Meadowlark Fishing Club are frequent visitors and users of the Al Black Recreation Area and a number of their constituents expressed their opposition to the proposed closure in petitions and during the public meetings. However, some of their members commented that they would be in favor of fishing on the lake if adequate universally accessible facilities were provided (see Appendix H, December 4, 2003 Proceedings, line 9, page 38; line 4, page 41; and line 3, page 45).

The Corps recognizes the importance of the recreation benefits associated with Al Black and is committed to their replacement to the greatest extent practicable on Cochiti Lake. In this context, the Corps acknowledges that a regionally unique and recreationally significant coldwater fishing opportunity would be unavailable to the public as a result of the Planned Action. Furthermore, the new replacement recreation facilities would be located on existing public recreation access land and would, therefore, result in a net loss of public recreation area. In consideration of the replacement alternatives analysis, the Corps has investigated all practicable recreation replacement site alternatives and concludes that these lost recreation benefits are unavoidable.

5.08 NOXIOUS WEEDS

Because the entire area has been graveled for parking, concreted for pedestrian access, and the shoreline armored with large rock, the only vegetation growing at the Al Black Recreation Area consists of a few non-native tree species along the upper limits of the south bank of the river. As discussed previously, all non-native plant species would be removed for disposal. The site restoration plan described in paragraph 2.02.C.3 prescribes planting of native cottonwood and riparian vegetation communities. Contract specifications would require that all vehicles be washed to remove non-native plant seeds before the equipment is allowed on-site. Additionally, any “tall pot” plants for revegetation would be root watered to prevent the unintended establishment of noxious or exotic weeds

Vegetation around the lake is comprised of a mixture of native and exotic species. While no one plant dominates the community, the proportion of natives to noxious weeds is not out of the ordinary. As previously discussed, any landscape plantings would consist of native species only. Such plantings would be installed using similar procedures as described for the restoration of the Al Black area. In consideration of this information, the proposed work complies with the provisions of federal Executive Order 13112 and the requirements of the State of New Mexico regulations addressing noxious weeds.

5.09 RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The Outlet Works Stilling Basin and the Rio Grande below the dam support a natural fishery in addition to the presence of the stocked rainbow trout. The most common species present are discussed in Section 3.07. The 9-inch rainbow trout that are stocked at the Outlet Works are too large to be subject to predation by other fish. Their removal from the system would have no affect on other species found in this reach of the river. Since the trout are raised in hatcheries and not accustomed to the wild, they are generally considered to be out of the system within a year and are not considered as major predators themselves (pers. comm. John Branstetter 2004). For these reasons, removal of rainbow trout from the river below the dam would not affect natural long-term productivity within the fish community below the dam.

As described in Section 1.03, the existing recreation area is extremely altered and it is maintained in that condition, and provides no natural habitat of value in its present state. The Planned Action may potentially restore habitat that could improve and increase long-term terrestrial productivity at the site, possibly to the level of the surrounding, undisturbed terrain, but not to a degree that would be considered significant. The proposed improvements to the existing recreation facilities and uses at the Cochiti and Tetilla Peak Recreation Areas are in keeping with the authorized land uses of the Project and should not impact short or long-term natural terrestrial productivity in those areas. It is not anticipated that placement of the fishing pier in the lake would adversely affect aquatic productivity. The anticipated increase of fishermen resulting from the establishment of the new fishing facilities should not be at a level that would adversely impact the fish population in the lake or significantly disturb terrestrial fauna in the area.

5.10 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

The Corps, Pueblo de Cochiti, and the New Mexico Department of Game and Fish recognized that the release of water from the bottom of the reservoir through the Outlet Works at Cochiti Lake created a unique opportunity to provide an artificial coldwater public recreational fishing experience in the high desert of New Mexico. Conveniently situated between the two largest cities in the state, Santa Fe and Albuquerque, the Outlet Works/Al Black Recreation Area provides a significant number of New Mexicans an outdoor recreation facility within a short distance from these

metropolitan areas. The ongoing stocking program by the New Mexico Department of Game and Fish has assured anglers that their visit to catch rainbow trout in the Stilling Basin would usually be successful and worth the trip. It is not anticipated that the request to close the area to public access is a decision that the Pueblo would reconsider in the future, if at all. Even so, in the unlikely event that the Outlet Works would be reopened for public recreation, the fish-stocking program could also be readily reestablished provided it is acceptable to the New Mexico Department of Game and Fish. For these reasons, the Planned Action does not represent an irreversible or irretrievable commitment of these recreation resources.

5.11 CUMULATIVE IMPACTS

The National Environmental Policy Act defines cumulative effects as "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." Construction of Cochiti Dam in 1965 has resulted in the ongoing degradation of the Rio Grande channel and its riparian zone both upstream and downstream of the structure. It is anticipated that the adverse environmental impacts attributed to its placement and traditional operation would continue in the future as long as it is operated for existing purposes and in the present manner. Its impacts to the immediate and surrounding landscape and local terrestrial ecosystem have stabilized since its construction. Therefore, the existing condition of the area above the Highway 22 Bridge can be considered the baseline against which impacts of the proposed project have been compared.

The closure of the Al Black Recreation area would not adversely affect the existing environment nor would site restoration efforts improve it to a level of significance in the area immediately below the dam or in that reach of the Rio Grande. The installation of shoreline recreation facilities is in keeping with Cochiti Dam and Lake Project Master Plan recreational purposes. In consideration of these issues, the Planned Action would not add significantly to the cumulative effects of other activities affecting the surrounding natural or human environment regardless of the entity accomplishing the work.

Currently, the Corps, Bureau of Reclamation, and the New Mexico Interstate Stream Commission are signatories of the Memorandum of Agreement to conduct the Upper Rio Grande Water Operations Review and prepare a Programmatic Water Operations Environmental Impact Statement. That study is being prepared by the parties in accordance with NEPA and will present alternatives for analyzing water operations at federally operated facilities in the Upper Rio Grande Basin and will evaluate the environmental, economic, and social effects of these alternatives. It is not anticipated that the proposed project would add cumulatively to the environmental effects of any of the water operations alternatives that may be considered and/or adopted by the water operations review.

In summary, there would be no significant impact on the environment resulting from the incremental impact of the Planned Action when added to any other past, present, or reasonably foreseeable future actions of other Federal and non-federal agencies.

SECTION 6

CONCLUSIONS

The closure of the Al Black Recreation Area by the Albuquerque District Corps of Engineers would honor their agreement with the Pueblo de Cochiti to continue a process of resolving the Pueblo's concerns associated with the Cochiti Dam and Lake Project. In accordance with the Memorandum of Agreement between the Corps and the Pueblo for operating public use areas on the Cochiti Dam and Lake Project, the Corps has concurred with the Pueblo's request to accomplish the Planned Action. The expressed desire of the Pueblo is to restore cultural traditions lost as a result of dam operation impacts that have adversely affected practices that not only insured the survival of the Pueblo but also created an intrinsic community environment. In addition, the Corps would restore the abandoned recreation area in coordination with the Pueblo to a natural state consistent with the environment that existed prior to the construction of the dam.

The Corps identified two feasible alternatives to the Pueblo's request to close the recreation area: The No Action and the Planned Action. The No Action alternative was considered unacceptable, as it was contrary to the agreement between the Corps and the Pueblo to close the site to the public. The Planned Action would honor that agreement but would result in the significant loss of public recreation resources. To address this loss, the alternatives analysis considered five feasible locations on Cochiti Lake to establish a replacement public recreation area. Of the five sites, one at the Cochiti Recreation Area and one at the Tetilla Peak Recreation Area were determined to be most acceptable based on pre-determined selection criteria. The facilities would replace most of the recreation resources lost with the closure of Al Black including universal access, picnicking, fishing, bird watching, wildlife viewing, and sightseeing.

Within the geographic scope of this Environmental Impact Statement replacement of the lost stocked coldwater fishing opportunity associated with the closure of the Outlet Works at Cochiti Dam is not possible. This publicly beneficial recreation resource is unique to the region as it is artificially created from the discharge of coldwater from the bottom of Cochiti Lake and the coldwater fish-stocking program managed by the New Mexico Department of Game and Fish. Furthermore, the establishment of the new public fishing facilities within existing recreation areas result in a net loss of public recreation with the closure of the Al Black facilities. The losses are considered unavoidable and have significant adverse effects on the local quality of the human environment. Realization of this project would not significantly affect any other physical, biological, or cultural resource at or in the surrounding area of the Planned Action.

The Corps intends to complete the Planned Action to the greatest extent possible by September 30, 2004. The closure of the Al Black Recreation Area would not take place until the new lake facilities are opened for public use.

SECTION 7

PREPARATION, CONSULTATION AND COORDINATION

7.01 PREPARERS

Ronald Kneebone – PhD Anthropology, 13 years with Corps as Cultural Resources Specialist/Project Manager/Pueblo Liaison
Douglas Bailey – Project Manager; M.S. Outdoor Recreation Planning; 16 years experience with Corps in outdoor recreation planning and operational project management
Cynthia Puerto - Outdoors Recreation Planner; BS Recreation Resources, MA Management; 20 years experience with Corps Natural Resources Management Program
Ernest Jahnke – Biologist; MS Biology; 24 years experience with Corps (20 years Regulatory Program, 4 years Environmental Resources)
John Schellberg – Ph.D., Archaeologist; 10 years experience with National Park Service; 20 years experience with Albuquerque Corps
Robert Browning – Economist; BA Economics and Political Science; 12 years Experience as Corps Regional Economist
Cecilia Horner – Civil Engineer; BS Civil Engineering; HTRW Technical Leader; 5 years experience with Corps, 8 years experience private sector
Al Lopez – Real Estate Specialist

7.02 Cooperating Agency/Technical Assistance – New Mexico Department of Game and Fish

Michael Sloane, Chief, Fisheries Management Division
Richard Hansen, Assistant Chief, Fisheries Management Division
John Martsh, Game Warden

7.03 GENERAL CONSULTATION AND COORDINATION

Agencies and other entities contacted formally or informally in preparation of this Draft Environmental Impact Statement:

Federal Agencies	
• U.S. Advisory Council on Historic Preservation	• U.S. Bureau of Indian Affairs
• U.S. Fish and Wildlife Service	• U.S. Environmental Protection Agency
• Natural Resources Conservation Service	• National Park Service
State Agencies	
• New Mexico Department of Game and Fish	• New Mexico Interstate Stream Commission
• New Mexico State Historic Preservation Officer	• Middle Rio Grande Conservancy District
• New Mexico Environment Department	
Organizations	
• Albuquerque Wildlife Federation	• Forest Guardians
• Meadowlark Senior Center Fishing Club	• Sangre de Cristo Audubon Society
• Pena Blanca Community Center	•
Pueblos	
• The Pueblo de Cochiti	• Santo Domingo Pueblo
• San Felipe Pueblo	
County	
• County of Sandoval	
Individuals	
• Consuelo Annon	• Jose Ortiz
• Lorenzo Armijo	• Virginia Ortiz
• Richard Becker	• Martin Perez
• Gregory Bergmark	• Richard Ransom
• Elsie Borges	• Thomas Swisstack
• John Brammer	• Isaac Remz
• Linda Concepcion	• Fred Rivera
• Michael Davis	• Clarence Ubl
• Maggie DeVore	• Maria Tatum
• Ernest Denecke	• Raymond Sisneros
• Sydney Dykhuizen	• Len Skulley
• Kelly Gnatkowski	• J.A. Woods
• Sheila Gibbens	• Luke Shelby
• Tara Gibbens	• Kevin Wrigley
• Charles Haygood	• Daniel O'Connell
• Paul Jaeger	• Roy Rivera
• James Jannuzzi	• Arline Ryter
• Maureen Johnson	• Sydney Ryter
• Paul Johnson	• David Schultz
• Michael Kadisak	• John Sharkey
• Edwin Macy	• William Shields
• Ronald Madsen	• Lee Ubl
• Dick Muenzer	• Milton Vernon
• Dennis Muirhead	• Yvonne Vernon
• Glenda Muirhead	• Pat Vester
• Lou Zaintz	

The Environmental Protection Agency published the Notice of Availability of the Draft Environmental Impact Statement in the *Federal Register* on April 9, 2004 (see Appendix A). The 45-day public review and comment period began on April 9, 2004, and ended May 24, 2004.

A Notice announcing the availability of the Draft Environmental Impact Statement and the 45-day public comment period was published on April 9, 2004, in the legal notice section of the *Albuquerque Journal*, the *Santa Fe New Mexican*, and the *Rio Rancho Observer* (see Appendix A). Readers were advised that the document was available electronically on the Albuquerque District Corps of Engineers website. A printed copy could also be obtained by writing the Corps. The Notice also advised that a copy of the document could be reviewed at the Peña Blanca Community Center, the Albuquerque Main Library, the Santa Fe Library, the Rio Rancho Library, and at the Corps' office in Albuquerque.

In addition to the specific agencies, tribes, organizations, and individuals listed above that were sent copies of the draft document (see correspondence in Appendix A), over 700 postcards (see Appendix A) announcing the compilation and availability of the Draft Environmental Impact Statement were mailed to individuals who had expressed an interest in receiving the document either in letters, through attendance at the public hearings, by having signed petitions submitted to the Corps protesting the closure of the Al Black Recreation Area, or by signing a petition requesting that they be notified of public meetings on the proposed action. Individuals receiving the postcard announcement were also informed that they could request a copy of the draft document by telephone or e-mail and that an electronic copy of the Draft Environmental Impact Statement would be posted on the Albuquerque District Corps of Engineers website.

SECTION 8

LITERATURE CITED AND PERSONAL COMMUNICATIONS

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Albuquerque District

**FINAL
ENVIRONMENTAL IMPACT STATEMENT
THE CLOSURE OF THE AL BLACK RECREATION AREA
AT THE COCHITI DAM OUTLET WORKS
IN SANDOVAL COUNTY, NEW MEXICO**

APPENDICES

June 2004

U.S. Army Corps of engineers
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